STIC Search Report
EIC 1700

STIC Database Tracking Number: 175480

TO:	From:
Angela Martin **Location: REM 6B61** **Art Unit : 1745** **January 4, 2006** **Case Serial Number: 10/600452**	**Mei Huang** **Location: EIC 1700** **REMSEN 4B28** **Phone: 571/272-3952** **Mei.huang@uspto.gov**

Search Notes

Examiner Martin,

- 29 answers (L27) shown on page 3-73.
- 27 answers (L28) were retrieved using the secondary keywords "nonaq." etc. (see page 73-75) and were displayed only by titles except answer 24 of 27.

If you have any questions or if you would like to refine the search query, please feel free to contact me.

Thank you for using STIC services!

Mei Huang

JP 2000-067914
JP2004140889

STIC Search Results Feedback Form

EIC17000

Questions about the scope or the results of the search? Contact *the EIC searcher or contact*:

Kathleen Fuller, EIC 1700 Team Leader
571/272-2505 REMSEN 4B28

Voluntary Results Feedback Form

- *I am an examiner in Workgroup:* ☐ *Example: 1713*
- *Relevant prior art* ***found****, search results used as follows:*
  - ☐ 102 rejection
  - ☐ 103 rejection
  - ☐ Cited as being of interest.
  - ☐ Helped examiner better understand the invention.
  - ☐ Helped examiner better understand the state of the art in their technology.

Types of relevant prior art found:

- ☐ Foreign Patent(s)
- ☐ Non-Patent Literature
  (journal articles, conference proceedings, new product announcements etc.)

- *Relevant prior art* ***not found:***
  - ☐ Results verified the lack of relevant prior art (helped determine patentability).
  - ☐ Results were not useful in determining patentability or understanding the invention.

Comments:

Access DB# 178460

SEARCH REQUEST FORM

Scientific and Technical Information Center

Requester's Full Name: Angela Martin Examiner #: 76027 Date: 1/3/05
Art Unit: 1745 Phone Number 30571-272-1288 Serial Number: 10/600,452
Mail Box and Bldg/Room Location: Rem 6B61 Results Format Preferred (circle): PAPER DISK E-MAIL

If more than one search is submitted, please prioritize searches in order of need.

****

Please provide a detailed statement of the search topic, and describe as specifically as possible the subject matter to be searched. Include the elected species or structures, keywords, synonyms, acronyms, and registry numbers, and combine with the concept or utility of the invention. Define any terms that may have a special meaning. Give examples or relevant citations, authors, etc, if known. Please attach a copy of the cover sheet, pertinent claims, and abstract.

Title of Invention: Nonaqueous electrolytic solution + Nonaqueous secondary battery

Inventors (please provide full names): attached

Earliest Priority Filing Date: 6/23/03 ; foreign 7/05/02

**For Sequence Searches Only* Please include all pertinent information (parent, child, divisional, or issued patent numbers) along with the appropriate serial number.*

Nonaqueous electrolyte (electrolytic solution)

Formula I in claim 1 wherein X is a halogen (Bromine (Br), Chlorine (Cl), Fluorine (F), ~~Fodine~~ Iodine (I))

****

STAFF USE ONLY	Type of Search	Vendors and cost where applicable
Searcher: MQH	NA Sequence (#)	STN ✓
Searcher Phone #:	AA Sequence (#)	Dialog
Searcher Location:	Structure (#) 1	Questel/Orbit
Date Searcher Picked Up:	Bibliographic	Dr.Link
Date Completed: 1/4/06	Litigation	Lexis/Nexis
Searcher Prep & Review Time: 20	Fulltext	Sequence Systems
Clerical Prep Time:	Patent Family	WWW/Internet
Online Time: 60	Other	Other (specify)

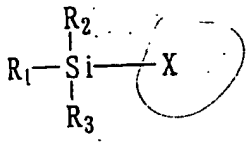
PTO-1590 (8-01)

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (original) A nonaqueous electrolytic solution comprising an electrolyte salt dissolved in an organic solvent, which contains a silicon compound represented by formula (I):



(I)

wherein R_1 represents an alkenyl group having 2 to 10 carbon atoms; R_2 and R_3 each represent an alkyl group having 1 to 10 carbon atoms, an alkoxy group having 1 to 10 carbon atoms, an alkenyl group having 2 to 10 carbon atoms or a halogen atom; and X represents a halogen atom.

2. (original) The nonaqueous electrolytic solution according to claim 1, wherein R_1 is a vinyl group.

3. (original) The nonaqueous electrolytic solution according to claim 1, wherein at least one of R_2 and R_3 is a methyl group.

4. (original) The nonaqueous electrolytic solution according to claim 1, wherein X is a fluorine atom.

5. (original) The nonaqueous electrolytic solution according to claim 1, wherein R_1 is a vinyl group, R_2 and R_3 are each a methyl group, and X is a fluorine atom.

6. (original) The nonaqueous electrolytic solution according to claim 1, wherein the organic solvent contains at least one member selected from the group consisting of a cyclic carbonate compound, a cyclic ester compound, a sulfone compound, a sulfoxide compound, an amide compound, an acyclic carbonate compound, an acyclic ether compound, a cyclic ether compound, and an acyclic ester compound.

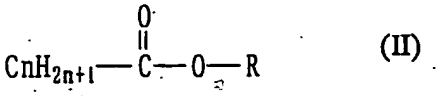
7. (original) The nonaqueous electrolytic solution according to claim 1, wherein the organic solvent contains at least one cyclic carbonate compound and at least one acyclic carbonate compound.

8. (original) The nonaqueous electrolytic solution according to claim 7, wherein the cyclic carbonate compound comprises ethylene carbonate.

9. (original) The nonaqueous electrolytic solution according to claim 7, wherein the cyclic carbonate compound comprises ethylene carbonate and 1,2-butylene carbonate.

10. (original) The nonaqueous electrolytic solution according to claim 7, wherein the acyclic carbonate compound comprises at least one member selected from the group consisting of dimethyl carbonate, ethylmethyl carbonate, and diethyl carbonate.

11. (original) The nonaqueous electrolytic solution according to claim 7, which further contains a carboxylic ester compound represented by formula (II):



(II)

wherein R represents an alkyl group having 1 to 4 carbon atoms; and n represents 0, 1 or 2.

12. (original) The nonaqueous electrolytic solution according to claim 1, wherein the electrolyte salt is at least one member selected from the group consisting of $LiPF_6$, $LiBF_4$, $LiClO_4$, $LiAsF_6$, $LiCF_3SO_3$, $LiN(CF_3SO_2)_2$, $LiC(CF_3SO_2)_3$, an $LiCF_3SO_3$ derivative, an $LiN(CF_3SO_2)_2$ derivative, and an $LiC(CF_3SO_2)_3$ derivative.

13. (original) The nonaqueous electrolytic solution according to claim 1, wherein the silicon compound represented by formula (I) is present in an amount of 0.05 to 5% by volume.

14. (original) A nonaqueous secondary battery comprising the nonaqueous electrolytic solution according to claim 1.

15. (new) The nonaqueous electrolytic solution according to claim 1, further comprising at least 5% by weight of a flame retardant, based on the total organic solvent.

16. (new) The nonaqueous electrolytic solution according to claim 15, wherein the flame retardant is one of a halogen and a phosphorus.

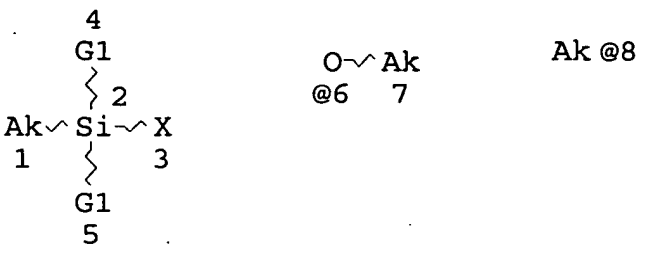
17. (new) The nonaqueous electrolytic solution according to claim 16, wherein the flame retardant is a phosphoric ester.

18. (new) The nonaqueous electrolytic solution according to claim 1, further comprising 10% to 50% by weight of a flame retardant, based on the total organic solvent.

19. (new) The nonaqueous electrolytic solution according to claim 18, wherein the flame retardant is one of a halogen and a phosphorus.

20. (new) The nonaqueous electrolytic solution according to claim 19, wherein the flame retardant is a phosphoric ester.

```
                SAV L12 ANG452B/A
                D SAV

     FILE 'HCAPLUS' ENTERED AT 15:27:23 ON 04 JAN 2006
L14          3434 SEA L12
L15        461850 SEA ELECTROLY?
L16            25 SEA L14 AND L15
L17             1 SEA L1 AND L16
L18        227492 SEA BATTERY OR BATTERIES OR (ELECTROCHEM? OR ELECTROLY?
                  OR GALVAN? OR WET OR DRY OR PRIMARY OR SECONDARY)(2A)(CEL
                  L OR CELLS)
L19            18 SEA L18 AND L14
L20            29 SEA L16 OR L19
                  D L11 QUE STAT
L21         45715 SEA NONAQ# OR NONAQUEOUS? OR NONWATER? OR NONH2O OR
                  NON(A)(AQ# OR AQUEOUS? OR WATER? OR H2O)
L22               QUE (52 OR 72)/SC,SX
L23            22 SEA L14 AND L21
L24            36 SEA L14 AND L22
L25            50 SEA L23 OR L24
L26             8 SEA L23 AND L24
L27            29 SEA L20 OR L26
L28            27 SEA (L23 OR L24) NOT L27

     FILE 'REGISTRY' ENTERED AT 15:44:01 ON 04 JAN 2006
L29             5 SEA L2 AND ?CARBONAT?/CNS
                  D SCA

     FILE 'HCAPLUS' ENTERED AT 15:45:33 ON 04 JAN 2006
L30         13428 SEA L29
L31            10 SEA L14 AND L30
L32            33 SEA L31 OR L27
L33             5 SEA L31 AND (L21 OR L22)
L34            29 SEA L33 OR L27
L35             4 SEA L32 NOT L34
                  D SCA TI

     FILE 'REGISTRY' ENTERED AT 15:51:48 ON 04 JAN 2006


=> d l9 que stat
L9                STR
```



VAR G1=8/6/X
NODE ATTRIBUTES:
CONNECT IS E1 RC AT 1
CONNECT IS E1 RC AT 7
CONNECT IS E1 RC AT 8
DEFAULT MLEVEL IS ATOM
GGCAT IS UNS AT 1
GGCAT IS SAT AT 7
DEFAULT ECLEVEL IS LIMITED

GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 8

STEREO ATTRIBUTES: NONE

=> fil hcap
FILE 'HCAPLUS' ENTERED AT 15:52:29 ON 04 JAN 2006
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
COPYRIGHT (C) 2006 AMERICAN CHEMICAL SOCIETY (ACS)

=> d l27 ibib abs hitstr hitind 1-
YOU HAVE REQUESTED DATA FROM 29 ANSWERS - CONTINUE? Y/(N):y

L27 ANSWER 1 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:1220765 HCAPLUS
DOCUMENT NUMBER: 143:463159
TITLE: Composition of **nonaqueous electrolyte** solution and secondary **nonaqueous electrolyte battery** thereof

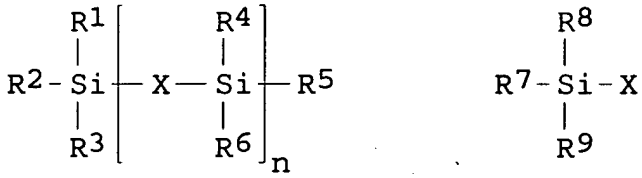
INVENTOR(S): Fukaya, Atsushi; Usami, Kyohei; Awano, Naomi; Tachikawa, Hiroyuki; Taki, Takayuki
PATENT ASSIGNEE(S): Asahi Denka Co., Ltd., Japan
SOURCE: PCT Int. Appl., 33 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2005109561	A1	20051117	WO 2005-JP8146	20050428
JP 2005353579	A2	20051222	JP 2005-117991	20050415

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, KE, KG, KM, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

PRIORITY APPLN. INFO.: JP 2004-140889 A 20040511

GI



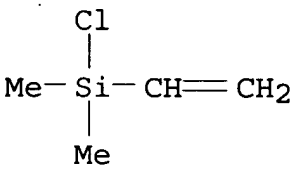
I

II

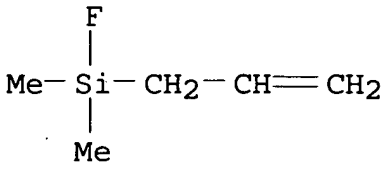
AB The **electrolyte** soln. contains a mixed org. solvent comprising ethylene carbonate 20-35, Et Me carbonate 35-45, Me2CO3 15-35, and Et2CO3 an/or (C3H7)2CO3 3-15 vo.%. The **electrolyte** soln. contains inorg. and/or org. Li salt as solute. and may also contain an additive I [R1-6= (ether bonding contg.) alkyl, alkoxy, alkenyl, alkenyloxy, aryl, or aryloxy groups; n = 0-5, , and X = a bond, O, Alkylene, alkylene dioxy, alkenylene, alkenylene dioxy, alkenylene, alkenylene dioxy, arylene, or arylene dioxy groups when n = 1-5, and ≥1 of R1-6 and X has an unsatd. group] or II (R7 = C2-10 alkenyl group, R8 and R9 = C1-10 alkyl, alkoxy or C2-10 alkenyl group or halogen, X = halogen).

IT **1719-58-0 210362-80-4**
RL: MOA (Modifier or additive use); USES (Uses)
(compns. of org. solvent mixts. for **electrolyte** solns. in secondary lithium **batteries**)

RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)



RN 210362-80-4 HCAPLUS
CN Silane, fluorodimethyl-2-propenyl- (9CI) (CA INDEX NAME)



IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery electrolyte** solvent compn
IT **Battery electrolytes**
(compns. of org. solvent mixts. for **electrolyte** solns. in secondary lithium **batteries**)
IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate 623-53-0, Ethyl methyl carbonate 21324-40-3, Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(compns. of org. solvent mixts. for **electrolyte** solns. in secondary lithium **batteries**)
IT **1719-58-0** 17955-81-6 18645-49-3 **210362-80-4**
RL: MOA (Modifier or additive use); USES (Uses)
(compns. of org. solvent mixts. for **electrolyte** solns. in secondary lithium **batteries**)
REFERENCE COUNT: 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

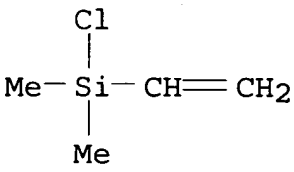
L27 ANSWER 2 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:667917 HCAPLUS
DOCUMENT NUMBER: 143:327229
TITLE: Novel polymeric systems for lithium ion **batteries** gel **electrolytes** II. Hybrid cross-linked poly(fluorosilicon-ethylene oxide)
AUTHOR(S): Appetecchi, G. B.; Alessandrini, F.; Passerini, S.; Caporiccio, G.; Boutevin, B.; Guida-PietraSanta, F.
CORPORATE SOURCE: Idrocomb C.R. Casaccia, ENEA, Rome, 00060, Italy
SOURCE: Electrochimica Acta (2005), 50(22), 4396-4404
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier B.V.

DOCUMENT TYPE: Journal
LANGUAGE: English

AB Crosslinked, self-supporting, membranes for lithium ion **battery** gel **electrolytes** were obtained by crosslinking a mixt. of polyfluorosilicone (PFSi) and polysilicone contg. ethylene oxide (EO) units [P(Si-EO)]. The membranes were also reinforced with nanosized silica. The two polymer precursors were synthesized with functional groups capable to form inter-mol. crosslinking, thus obtaining three-dimensional, polymer matrixes. The precursors were dissolved in a common solvent and cross-linked to obtain free-standing PFSi/P(Si-EO):SiO2 composite films. The latter were undergone to swelling processes in (**non-aq.**, aprotic, lithium salt contg.) **electrolytic** solns. to obtain gel-type polymer **electrolytes.** The properties of the swelled PFSi/P(Si-EO):SiO2 samples were evaluated as a function of the **electrolytic** solns. and the dipping time. The PFSi/P(Si-EO):SiO2 membranes exhibited large swelling properties, high ionic cond. and good electrochem. stability.

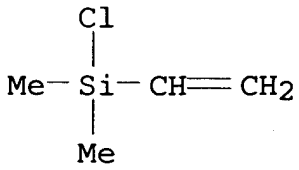
IT **1719-58-0DP**, reaction products with polysiloxanes, polymers
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)



IT **1719-58-0**, Chlorodimethylvinylsilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): **52**

ST lithium ion **battery** gel **electrolyte** crosslinked polyfluorosilicon ethylene oxide

IT Secondary **batteries**
(lithium ion; prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT Polysiloxanes, uses
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(polyoxyalkylene-, fluorine-contg.; prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT Fluoropolymers, uses
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(polyoxyalkylene-siloxane-; prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT Electric impedance
Ionic conductivity
Membranes, nonbiological
Polymer **electrolytes**
Swelling, physical
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT Polyoxyalkylenes, uses
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT Polyoxyalkylenes, uses

RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(siloxane-, fluorine-contg.; prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 865316-04-7DP, lithium complexes, perchlorate- or hexafluorophosphate-contg. 865316-04-7P
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(crosslinked; prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 96-48-0 96-49-1, 1,3-Dioxolan-2-one 105-58-8 616-38-6, Dimethyl carbonate
RL: NUU (Other use, unclassified); USES (Uses)
(**electrolyte** soln.-contg.; prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 7631-86-9, Silica, uses
RL: MOA (Modifier or additive use); USES (Uses)
(nanometric; prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 25322-68-3, PEO
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); USES (Uses)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 7439-93-2DP, Lithium, crosslinked poly(fluorosilicon-ethylene oxide) complexes, perchlorate- or hexafluorophosphate-contg.
RL: DEV (Device component use); POF (Polymer in formulation); PRP (Properties); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 7791-03-9 21324-40-3, Lithium hexafluorophosphate (LiPF6)
RL: MOA (Modifier or additive use); USES (Uses)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT **1719-58-0DP**, reaction products with polysiloxanes, polymers

865316-00-3DP, dimethylvinylsilyl-terminated 865316-02-5DP, dimethylvinylsilyl-terminated
RL: PRP (Properties); RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 74-85-1, Ethene, reactions 335-70-6 1066-35-9 **1719-58-0**, Chlorodimethylvinylsilane 58185-54-9, 4,7,10,13,16-Pentaoxanonadeca-1,18-diene
RL: RCT (Reactant); RACT (Reactant or reagent)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

IT 35192-49-5P 865316-01-4P
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)
(prepn. and elec. properties of crosslinked poly(fluorosilicon-ethylene oxide) lithium ion **batteries** gel **electrolyte**)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 3 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:521417 HCAPLUS
DOCUMENT NUMBER: 143:194818
TITLE: Two new siloxanic proton-conducting membranes
AUTHOR(S): Di Noto, Vito; Vittadello, Michele
CORPORATE SOURCE: Dipartimento di Scienze Chimiche, Universita di Padova, Padua, I-35135, Italy
SOURCE: Electrochimica Acta (2005), 50(19), 3998-4006
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

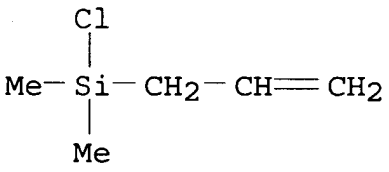
AB The development of stable polymer **electrolytes** having good proton cond., low cost and operating at medium temps. represent a crucial step in the evolution of polymer **electrolyte** fuel **cells.** We describe two new siloxanic proton-conducting membranes that were synthesized through a two-stage protocol. In the first stage, a poly(Me hydro siloxane) precursor (P) bearing siloxane side chains with sulfonic acid groups was prepd. In the second step, the hydrolysis of pristine precursor or its deriv. obtained by grafting siloxane chains on P yielded two types of

membranes with the formulas {Si(CH3)3O[Si(CH3)HO]21.26 -[Si(CH3)((CH2)3SO3H)O]1.8 -[Si(CH3)((CH2)3Si(CH3)2O-)-O]14 -Si(CH3)3}n (A) and {Si(CH3)3O[Si(CH3)HO]21.26 -[Si(CH3)((CH2)3SO3H)O]1.8 -[Si(CH3)((CH2)3(Si(CH3)2O-)w)-O]v[Si(CH3)((CH2)3Si(CH3)2O-)-O]14-vSi(CH3)3}n (B), with w = 20.31. Polymer membranes of A and B were prepd. by means of a hot-pressing process at 80 °C and 10 t/cm2. SEM showed that A and B are rubbery materials with rough and transparent surfaces. Thermogravimetric investigations performed under air atm. disclosed that A and B are thermally stable up to at least 198 °C. DSC measurements yielded T g(s) of -44 and -60 °C for A and B, resp. The polymers exhibit ionic exchange capacities of 0.33 (A) and 0.15 m-eq/g (B). FT-IR and FT-Raman investigations revealed that the polymers consist of reticulated siloxane networks with pendant silicone chains having sulfonic acid groups.

IT **4028-23-3**, Allylchlorodimethylsilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrosilylation agent; siloxanic proton-conducting membranes)

RN 4028-23-3 HCAPLUS

CN Silane, chlorodimethyl-2-propenyl- (9CI) (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 35, 37

IT **4028-23-3**, Allylchlorodimethylsilane 14418-84-9, 2-Propene-1-sulfonyl chloride
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrosilylation agent; siloxanic proton-conducting membranes)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 4 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2005:21131 HCAPLUS
DOCUMENT NUMBER: 142:414406
TITLE: Conducting agent for alkaline Zn/MnO2 **battery** and its production
INVENTOR(S): Su, Lixiao

PATENT ASSIGNEE(S): Yuanhan Graphite Coating Factory, Shaowu, Fujian, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 10 pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1481038	A	20040310	CN 2003-149783	20030806
PRIORITY APPLN. INFO.:			CN 2003-149783	20030806

AB The conducting agent with Fe content <20 x 10-6 is composed of 181-377 part resin compn. soln. and 50-100 part conductive powder. The resin compn. soln. is composed of vinyl resin 10- 30, copolymer resin 5-15, coupling agent 1-2, ketone solvent 80- 160, ester solvent 20-40, benzene soln. 20-40, alkane solvent 20-40, THF 20-40, and plasticizer 5-10 part. The vinyl resin is polyvinyl chloride, poly(vinyl butyral), paste polyvinyl chloride resin, poly(vinylidene dichloride) resin, and/or poly(perchloroethylene) resin. The copolymer resin is hydroxy-(carboxyl, or ester)- contg. vinyl chloride-vinyl acetate copolymer resin, vinyl chloride-vinyl acetate copolymer resin, and/or vinylidene dichloride-acrylonitrile copolymer resin. The coupling agent is vinyltrichlorosilane, methyltrimethoxysilane, vinyltriethoxysilane, and/or vinyltrimethoxysilane. The plasticizer is diisooctyl phthalate, dioctyl phthalate, di-Bu phthalate, dioctyl adipate, or diisodecyl phthalate. The conductive powder is graphite or Carbon black.

IT **75-94-5**, Vinyltrichlorosilane
RL: DEV (Device component use); USES (Uses)
(coupling agent; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
RN 75-94-5 HCAPLUS
CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)

$Cl_3Si-CH=CH_2$

IC ICM H01M002-20
ICS H01M006-02; H01B001-24; C09D005-24; C09J009-02
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
ST conducting agent alk zinc manganese dioxide **battery**
IT Esters, uses
RL: DEV (Device component use); USES (Uses)
(arom.; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
IT Polymers, uses
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(co-; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
IT Coupling agents
Plasticizers
Solvents
(conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
IT Alkanes, uses
Ketones, uses
Silanes
RL: DEV (Device component use); USES (Uses)
(conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
IT Polyvinyl butyrals
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
IT **Battery** electrodes
(conductive materials for; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
IT Carbon black, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(conductor; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)
IT Vinyl compounds, uses
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(polymers; conducting agent for alk. Zn/MnO2 **battery**

and its prodn.)

IT 71-43-2, Benzene, uses 109-99-9, Tetrahydrofuran, uses
RL: DEV (Device component use); USES (Uses)
(conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

IT 9002-85-1, Poly(vinylidene dichloride) 9002-86-2, Polyvinyl chloride 9003-22-9, Vinyl acetate-vinyl chloride copolymer 9003-22-9D, Vinyl acetate-vinyl chloride copolymer, partially hydrolyzed 9010-76-8, Acrylonitrile-vinylidene dichloride copolymer 25135-99-3, Poly(tetrachloroethylene)
RL: DEV (Device component use); POF (Polymer in formulation); USES (Uses)
(conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

IT 7782-42-5, Graphite, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(conductor; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

IT **75-94-5**, Vinyltrichlorosilane 78-08-0, Vinyltriethoxysilane 1185-55-3, Methyltrimethoxysilane 2768-02-7, Vinyltrimethoxysilane
RL: DEV (Device component use); USES (Uses)
(coupling agent; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

IT 1313-13-9, Manganese dioxide, uses
RL: DEV (Device component use); USES (Uses)
(electrode material; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

IT 7440-66-6, Zinc, uses
RL: DEV (Device component use); TEM (Technical or engineered material use); USES (Uses)
(electrode material; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

IT 14280-30-9, Hydroxide, uses
RL: DEV (Device component use); USES (Uses)
(**electrolyte** solns.; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

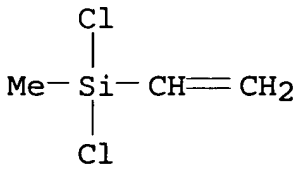
IT 84-74-2, Dibutyl phthalate 103-23-1, Dioctyl adipate 117-81-7, Diisooctyl phthalate 117-84-0, Di-n-octyl phthalate 26761-40-0, Diisodecyl phthalate
RL: DEV (Device component use); USES (Uses)
(plasticizer; conducting agent for alk. Zn/MnO2 **battery** and its prodn.)

L27 ANSWER 5 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:850384 HCAPLUS
DOCUMENT NUMBER: 142:41337
TITLE: Novel polymeric systems for lithium-ion **batteries** gel **electrolytes** I. Cross-linked polyfluorosilicone
AUTHOR(S): Appetecchi, G. B.; Alessandrini, F.; Passerini, S.; Caporiccio, G.; Boutevin, B.; Guida-Pietrasanta, F.
CORPORATE SOURCE: Idrocomb C.R. Casaccia, ENEA, Rome, 00060, Italy
SOURCE: Electrochimica Acta (2004), 50(1), 149-158
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier B.V.
DOCUMENT TYPE: Journal
LANGUAGE: English

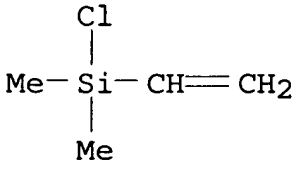
AB The study of chem. cross-linked, self-supporting gel-type **electrolyte** membranes, based on hybrid polyfluorosilicone polymers reinforced with nanosized silica, for lithium-ion **battery** systems is reported. The polyfluorosilicone materials were selected from their high chem. and thermal stabilities. The precursors were synthesized with functional groups capable to form inter-mol. crosslinking, thus obtaining three-dimensional polymer matrixes. The latter were undergone to swelling processes in (**nonaq.**, lithium salt contg.) **electrolytic** solns. to obtain gel-type polymer **electrolytes.** Several kinds of membranes, based on different types of polyfluorosilicone precursor, were prepd. and characterized in terms of swelling behavior, ionic cond. and electrochem. stability. The properties of the swelled matrixes were evaluated as a function of dipping time, temp., kind of **electrolytic** soln. and crosslinking initiator content.

IT **124-70-9DP**, Dichloromethylvinylsilane, hydrolyzed, copolymers with fluoroalkyl methylsiloxy- and dimethylsiloxy- group contg. telomers **1719-58-0DP**, Chlorodimethylvinylsilane, hydrolyzed, copolymers with fluoroalkyl methylsiloxy- and dimethylsiloxy- group contg. telomers
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(composites with silica; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

RN 124-70-9 HCAPLUS
CN Silane, dichloroethenylmethyl- (9CI) (CA INDEX NAME)



RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)



CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 39, 49, 76
ST polymer gel **electrolyte** lithium ion **battery** silica composite polyfluorosilicone
IT **Battery electrolytes**
Gels
Polymer **electrolytes**
Swelling, physical
(cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)
IT Fluoropolymers, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(di-Me siloxane-, fluoroalkyl- and vinyl group-contg., vinyl group-terminated; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)
IT Polysiloxanes, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(di-Me, fluoroalkyl- and vinyl group-contg., vinyl group-terminated; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel

electrolytes)

IT Silicone rubber, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(fluorine-contg.; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT Telomers (polymers)
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(fluoropolymers, copolymers with dichloromethyl and chlorodimethylsilane derivs., composites with silica; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT Secondary **batteries**
(lithium; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT Ionic conductivity
(of gel polymer **electrolyte** composites; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT Electric current-potential relationship
(of gel polymer **electrolytes** in **electrolytic** solns.; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT Glass transition temperature
(of polysiloxanes, di-Me, fluoroalkyl- and vinyl group-contg. precursors and crosslinked silica-composite membranes; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT Fluoro rubber
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(silicone; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT Fluoropolymers, preparation
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)

(telomers, copolymers with dichloromethyl and chlorodimethylsilane derivs., composites with silica; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT 7631-86-9, Aerosil 200, uses
RL: PEP (Physical, engineering or chemical process); PYP (Physical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(colloidal; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT 7791-03-9, Lithium perchlorate 21324-40-3, Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(composite gel polymer **electrolytes** with carbonates and dimethyl-fluoroalkyl-polysiloxanes; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT **124-70-9DP**, Dichloromethylvinylsilane, hydrolyzed, copolymers with fluoroalkyl methylsiloxy- and dimethylsiloxy- group contg. telomers 1066-35-9DP, Chlorodimethylsilane, copolymers with fluoroalkyl methylsiloxy- and dimethylsiloxy- group contg. telomers **1719-58-0DP**, Chlorodimethylvinylsilane, hydrolyzed, copolymers with fluoroalkyl methylsiloxy- and dimethylsiloxy- group contg. telomers
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(composites with silica; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT 78-63-7, 2,5-Bis(tert-butylperoxy)-2,5-dimethyl-hexane
RL: CAT (Catalyst use); USES (Uses)
(cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT 74-84-0DP, Ethane, copolymers with 1,6-diiodododecafluorohexane, chlorodimethylsilane, hydrolyzed 1,1,3,3,5,5-Hexamethyltrisiloxane, and hydrolyzed dichloromethylvinylsilane and chlorodimethylvinylsilane 335-70-6DP, 1,8-Diiodohexadecafluorooctane, copolymers with ethane, chlorodimethylsilane, hydrolyzed 1,1,3,3,5,5-Hexamethyltrisiloxane, and hydrolyzed dichloromethylvinylsilane and chlorodimethylvinylsilane 375-80-4DP, 1,6-Diiodododecafluorohexane, copolymers with ethane, chlorodimethylsilane, hydrolyzed 1,1,3,3,5,5-Hexamethyltrisiloxane,

and hydrolyzed dichloromethylvinylsilane and chlorodimethylvinylsilane 591-87-7DP, Allyl acetate, copolymers with chlorodimethylsilane, and hydrolyzed dichloromethylvinylsilane and chlorodimethylvinylsilane and diiodo-terminated copolymers of vinylidene difluoride, hexafluoropropene, tetrafluoroethenevinylidene difluoride 1189-93-1DP, 1,1,3,3,5,5-Hexamethyltrisiloxane, hydrolyzed, copolymers with ethane, 1,6-diiodododecafluorohexane, hydrolyzed dichloromethylvinylsilane and chlorodimethylvinylsilane
RL: PEP (Physical, engineering or chemical process); PRP (Properties); PYP (Physical process); SPN (Synthetic preparation); PREP (Preparation); PROC (Process)
(cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

IT 96-48-0, γ-Butyrolactone 96-49-1, Ethylene carbonate 105-58-8, Diethylcarbonate 108-32-7, Propylene carbonate 616-38-6, Dimethyl carbonate
RL: DEV (Device component use); USES (Uses)
(gel composites with carbonates/lithium salts/dimethyl-fluoroalkyl-polysiloxanes; cross-linked polyfluorosilicons as novel polymeric systems for lithium-ion **batteries** gel **electrolytes**)

REFERENCE COUNT: 24 THERE ARE 24 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 6 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:493203 HCAPLUS
DOCUMENT NUMBER: 141:40696
TITLE: **Nonaqueous electrolyte** solution and secondary lithium **battery** which uses the solution
INVENTOR(S): Hinohara, Akio; Hayashi, Takeshi
PATENT ASSIGNEE(S): Mitsui Chemicals Inc., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 13 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004171981	A2	20040617	JP 2002-337756	

PRIORITY APPLN. INFO.: JP 2002-337756 200211 21

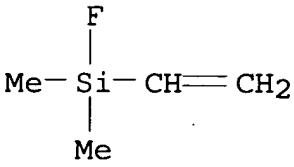
200211 21

AB The **electrolyte** soln. comprises a Li salt and a **nonaq.** solvent mixt. contg. a fluorosilane compd. of the structure R1R2R3SiF where R1-3 = F or a C1-12 hydrocarbon group; and ≥1 of R1-3 = a C1-12 hydrocarbon group. The **battery** has a Li-intercalating anode, a Li-intercalating anode, and the above **electrolyte** soln.

IT **38755-76-9**, Fluorovinyl dimethyl silane
RL: MOA (Modifier or additive use); USES (Uses)
(**electrolyte** solns. contg. fluorosilane compds. in solvents for secondary lithium **batteries**)

RN 38755-76-9 HCAPLUS

CN Silane, ethenylfluorodimethyl- (9CI) (CA INDEX NAME)



IC ICM H01M010-40

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST secondary lithium **battery electrolyte** **nonaq** solvent fluorosilane compd

IT **Battery electrolytes**
(**electrolyte** solns. contg. fluorosilane compds. in solvents for secondary lithium **batteries**)

IT Secondary **batteries**
(lithium; **electrolyte** solns. contg. fluorosilane compds. in solvents for secondary lithium **batteries**)

IT 96-49-1, Ethylene carbonate 623-53-0, Methyl ethyl carbonate 21324-40-3, Lithium hexafluorophosphate
RL: DEV (Device component use); USES (Uses)
(**electrolyte** solns. contg. fluorosilane compds. in solvents for secondary lithium **batteries**)

IT 312-40-3, Difluorodiphenyl silane 368-47-8, Phenyl trifluorosilane 379-50-0, Fluorotriphenyl silane 420-56-4, Fluorotrimethyl silane

872-36-6, Vinylene carbonate 4427-96-7, Vinyl ethylene carbonate
4663-29-0 **38755-76-9**, Fluorovinyl dimethyl silane
96164-66-8, Trifluorohexyl silane
RL: MOA (Modifier or additive use); USES (Uses)
(**electrolyte** solns. contg. fluorosilane compds. in solvents for secondary lithium **batteries**)

L27 ANSWER 7 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:413007 HCAPLUS
DOCUMENT NUMBER: 140:424654
TITLE: Method to produce graphite/polymer hybrid composites
INVENTOR(S): Kasseh, Abdeslam; Chaouki, Jamal; Ennajimi, Elmekki
PATENT ASSIGNEE(S): Can.
SOURCE: PCT Int. Appl., 32 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004041915	A1	20040521	WO 2003-CA1731	20031107
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2411443	AA	20040507	CA 2002-2411443	20021107

PRIORITY APPLN. INFO.: CA 2002-2411443 A 20021107

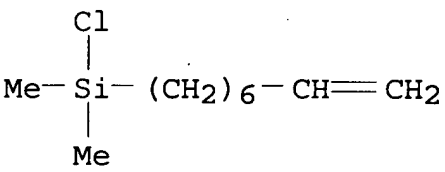
07

AB Hybrid composites with tailored structure were prepd. using a novel synthesis method based on stable free radical polymn. combined with polymn. compounding. Highly filled and well-dispersed filler/polymer composites have been developed using this method. Grafting polymers onto carbon fillers was carried out in bulk polymn., in soln. and in colloidal dispersion. This method allows control of the percentage of grafted polymers, the architecture of grafted polymers, the length of chains, and the polydispersity index. The org. fillers may be graphite, carbon black and the like in the form of flakes, fibers, colloidal suspensions, films or powders. The synthesis process performed by this method gave grafting percentages of polymers and copolymers ranging from 12 to 88%. Graphite/Polymer composites produced herein represent new material used in bipolar plates for fuel cells and filter press **electrolyzers** and as composite material for automobiles and aircraft structures.

IT **17196-12-2**, 7-Octenyldimethylchlorosilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(free radical graft polymn. in method to produce graphite/polymer hybrid composites)

RN 17196-12-2 HCAPLUS

CN Silane, chlorodimethyl-7-octenyl- (8CI, 9CI) (CA INDEX NAME)



IC ICM C08J005-06
ICS C08J005-24; C08F002-44

CC 38-3 (Plastics Fabrication and Uses)

ST fuel **cell** filter press **electrolyzer** graphite polymer composite; automobile graphite polymer nanocomposite; free radical polymn grafting carbon filler graphite composite; bulk polymn grafting carbon filler graphite composite; polydispersity index grafting carbon hybrid composite

IT Automobiles
Electrolytic cells
Fuel cells
Hybrid organic-inorganic materials

(method to produce graphite/polymer hybrid composites)
IT 2530-85-0, 3-(Trimethoxysilyl)propyl methacrylate **17196-12-2**, 7-Octenyldimethylchlorosilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(free radical graft polymn. in method to produce graphite/polymer hybrid composites)

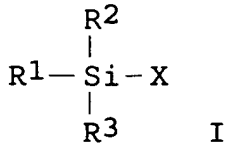
L27 ANSWER 8 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2004:39479 HCAPLUS
DOCUMENT NUMBER: 140:79830
TITLE: **Nonaqueous battery electrolyte** containing a specific silicon compound
INVENTOR(S): Awano, Naomi; Usami, Kyohei; Kubota, Naohiro
PATENT ASSIGNEE(S): Denso Corporation, Japan; Asahi Denka Co., Ltd.
SOURCE: U.S. Pat. Appl. Publ., 11 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2004007688	A1	20040115	US 2003-600452	20030623
JP 2004039510	A2	20040205	JP 2002-196750	20020705
EP 1383187	A2	20040121	EP 2003-14518	20030703

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

PRIORITY APPLN. INFO.: JP 2002-196750 A 20020705

OTHER SOURCE(S): MARPAT 140:79830
GI

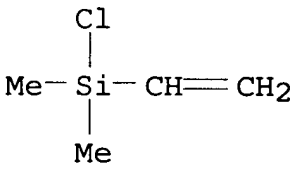


I

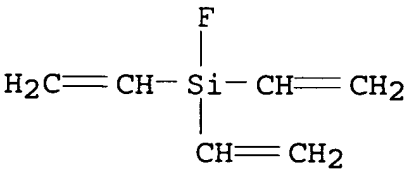
AB A **nonaq. electrolytic** soln. comprising an **electrolyte** salt dissolved in an org. solvent is disclosed. The **nonaq. electrolytic** soln. contains a silicon compd. represented by formula (I): wherein R1 represents an alkenyl group having 2 to 10 carbon atoms; R2 and R3 each represent an alkyl group having 1 to 10 carbon atoms, an alkoxy group having 1 to 10 carbon atoms, an alkenyl group having 2 to 10 carbon atoms or a halogen atom; and X represents a halogen atom.

IT **1719-58-0 19304-01-9 38755-76-9 210362-80-4 640269-68-7 640269-69-8 640269-70-1 640269-71-2**
RL: MOA (Modifier or additive use); USES (Uses)
(**nonaq. battery electrolyte** contg. specific silicon compd.)

RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)

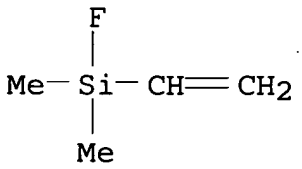


RN 19304-01-9 HCAPLUS
CN Silane, triethenylfluoro- (9CI) (CA INDEX NAME)

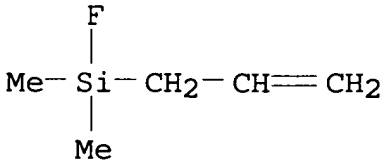


RN 38755-76-9 HCAPLUS

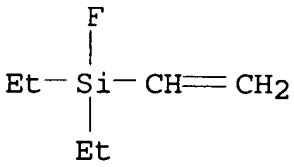
CN Silane, ethenylfluorodimethyl- (9CI) (CA INDEX NAME)



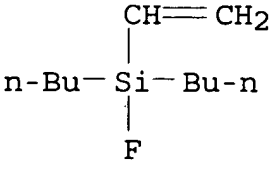
RN 210362-80-4 HCAPLUS
CN Silane, fluorodimethyl-2-propenyl- (9CI) (CA INDEX NAME)



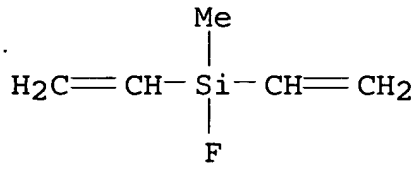
RN 640269-68-7 HCAPLUS
CN Silane, ethenyldiethylfluoro- (9CI) (CA INDEX NAME)



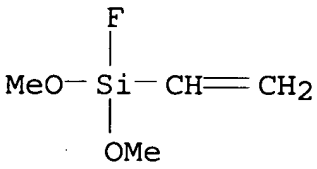
RN 640269-69-8 HCAPLUS
CN Silane, dibutylethenylfluoro- (9CI) (CA INDEX NAME)



RN 640269-70-1 HCAPLUS
CN Silane, diethenylfluoromethyl- (9CI) (CA INDEX NAME)



RN 640269-71-2 HCAPLUS
CN Silane, ethenylfluorodimethoxy- (9CI) (CA INDEX NAME)



IC ICM H01G002-00
INCL 252062200
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST **battery nonaq electrolyte** specific silicon compd additive
IT Ethers, uses
RL: DEV (Device component use); USES (Uses)
(cyclic; **nonaq. battery electrolyte** contg. specific silicon compd.)
IT Carboxylic acids, uses
RL: DEV (Device component use); USES (Uses)
(esters; **nonaq. battery electrolyte** contg. specific silicon compd.)
IT Secondary **batteries**
(lithium; **nonaq. battery electrolyte** contg. specific silicon compd.)
IT **Battery electrolytes**
(**nonaq. battery electrolyte** contg. specific silicon compd.)
IT Amides, uses
Esters, uses
Ethers, uses
Lactones
Sulfones

Sulfoxides
RL: DEV (Device component use); USES (Uses)
(**nonaq. battery electrolyte** contg.
specific silicon compd.)

IT 96-49-1, Ethylene carbonate 105-58-8, Diethyl carbonate 463-79-6D, Carbonic acid, acyclic compds. 463-79-6D, Carbonic acid, cyclic compds. 616-38-6, Dimethyl carbonate 623-53-0, Ethylmethyl carbonate 4437-85-8, 1,2-Butylene carbonate 7791-03-9, Lithium perchlorate 14283-07-9, Lithium tetrafluoroborate 21324-40-3, Lithium hexafluorophosphate 29935-35-1, Lithium hexafluoroarsenate 33454-82-9, Lithium triflate 90076-65-6 132404-42-3
RL: DEV (Device component use); USES (Uses)
(**nonaq. battery electrolyte** contg.
specific silicon compd.)

IT **1719-58-0** 7440-21-3D, Silicon, compd. **19304-01-9 38755-76-9 210362-80-4 640269-68-7 640269-69-8 640269-70-1 640269-71-2**
RL: MOA (Modifier or additive use); USES (Uses)
(**nonaq. battery electrolyte** contg.
specific silicon compd.)

L27 ANSWER 9 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2003:634130 HCAPLUS
DOCUMENT NUMBER: 139:166967
TITLE: Anticorrosion coatings for metallic fuel cell components in proton-exchange membrane fuel cells and direct methanol fuel cells
INVENTOR(S): Coleman, Ernest A.; Allen, Jeffrey P.
PATENT ASSIGNEE(S): Gencell Corporation, USA
SOURCE: PCT Int. Appl., 74 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2003067682	A2	20030814	WO 2003-US3466	20030205
WO 2003067682	A3	20050616		

W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH,

CN, CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

US 2003170539 A1 20030911 US 2003-345073 200301 15

CA 2474913 AA 20030814 CA 2003-2474913 200302 05

US 2003157391 A1 20030821 US 2003-358736 200302 05

CA 2510358 AA 20040805 CA 2004-2510358 200401 14

WO 2004066470 A2 20040805 WO 2004-US939 200401 14

WO 2004066470 A3 20041021

W: AE, AE, AG, AL, AL, AM, AM, AM, AT, AT, AU, AZ, AZ, BA, BB, BG, BG, BR, BR, BW, BY, BY, BZ, BZ, CA, CH, CN, CN, CO, CO, CR, CR, CU, CU, CZ, CZ, DE, DE, DK, DK, DM, DZ, EC, EC, EE, EE, EG, ES, ES, FI, FI, GB, GD, GE, GE, GH, GM, HR, HR, HU, HU, ID, IL, IN, IS, JP, JP, KE, KE, KG, KG, KP, KP, KP, KR, KR, KZ, KZ, KZ, LC, LK, LR, LS, LS, LT, LU, LV, MA, MD, MD, MG, MK, MN, MW, MX, MX, MZ, MZ, NA, NI

RW: BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

EP 1584119 A2 20051012 EP 2004-702206 200401 14

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK

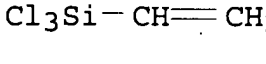
PRIORITY APPLN. INFO.:

US 2002-354554P	P	20020205
US 2003-345073	A	20030115
WO 2003-US3466	W	20030205
WO 2004-US939	W	20040114

AB Metallic fuel cell components that are at least partially coated with a coating comprising silane are provided. Methods of protecting a metallic fuel cell component from corrosion is provided, in which the methods comprise at least partially coating a fuel cell bipolar separator plate with a coating comprising a silane. Also included are fuel cells and fuel cell stacks comprising such metallic fuel cell components and methods for manufg. such.

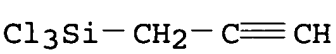
IT **75-94-5**, Vinyltrichlorosilane
RL: TEM (Technical or engineered material use); USES (Uses)
(anticorrosion coatings for metallic fuel cell components in proton-exchange membrane fuel cells and direct methanol fuel cells)

RN 75-94-5 HCAPLUS
CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



IT **33415-29-1**
RL: TEM (Technical or engineered material use); USES (Uses)
(panticorrosion coatings for metallic fuel cell components in proton-exchange membrane fuel cells and direct methanol fuel cells)

RN 33415-29-1 HCAPLUS
CN Silane, trichloro-2-propynyl- (8CI, 9CI) (CA INDEX NAME)



IC ICM H01M
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 55, 56
IT Fuel **cells**
(solid **electrolyte**, proton-exchange membrane; anticorrosion coatings for metallic fuel cell components in proton-exchange membrane fuel cells and direct methanol fuel cells)
IT 64-19-7, Acetic acid, uses 67-63-0, Isopropanol, uses **75-94-5**, Vinyltrichlorosilane 78-08-0, Vinyltriethoxysilane 78-10-4, Tetraethoxysilane 108-88-3, Toluene, uses 681-84-5, Tetramethoxysilane 919-30-2, 3-Aminopropyltriethoxysilane 999-97-3, Hexamethyldisilazane 1067-53-4 1185-55-3, Methyltrimethoxysilane 1330-20-7, Xylene, uses 1760-24-3, N-(2-Aminoethyl)-3-aminopropyltrimethoxysilane 2530-83-8, 3-Glycidoxypropyltrimethoxysilane 2530-85-0, γ-Methacryloxypropyltrimethoxysilane 2768-02-7, Vinyltrimethoxysilane 3069-42-9, Octadecyltrimethoxysilane 3388-04-3, 2-(3,4-Epoxycyclohexyl)-ethyltrimethoxysilane 4130-08-9, Vinyl triacetoxysilane 4420-74-0, 3-Mercaptopropyltrimethoxysilane 4766-57-8, Tetra-n-butoxysilane 5700-28-7 7538-45-6, 2-Mercaptoethyltrimethoxysilane 7803-62-5D, Silane, 1-cyanobutyltrialkoxy deriv. 7803-62-5D, Silane, 1-cyanoisobutyltrialkoxy deriv. 7803-62-5D, Silane, cyanoethyltrialkoxy deriv. 7803-62-5D, Silane, cyanoisobutyltrialkoxy deriv. 7803-62-5D, Silane, cyanophenyltrialkoxy deriv. 7803-62-5D, Silane, cyanopropyltrialkoxy deriv. 13822-56-5, 3-Aminopropyltrimethoxysilane 14044-97-4, Mercaptosilane 16881-77-9, Methyldimethoxysilane 17053-34-8 20208-39-3, γ-Acryloxypropyltriethoxysilane 23779-32-0, γ-Ureidopropyltriethoxysilane 25904-66-9 32957-40-7, Ethynyl trimethoxysilane 51473-59-7 575464-53-8 575464-54-9
RL: TEM (Technical or engineered material use); USES (Uses)
(anticorrosion coatings for metallic fuel cell components in proton-exchange membrane fuel cells and direct methanol fuel cells)
IT **33415-29-1**
RL: TEM (Technical or engineered material use); USES (Uses)
(panticorrosion coatings for metallic fuel cell components in proton-exchange membrane fuel cells and direct methanol fuel cells)

L27 ANSWER 10 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2002:499574 HCAPLUS
DOCUMENT NUMBER: 137:35458
TITLE: Crosslinked or modified polymeric porous films as separators for **batteries** with **nonaqueous electrolytes**
INVENTOR(S): Kenichiro, Kami; Hiroshi, Ueshima; Ryuichirou, Shinkai; Norikazu, Hosokawa; Manabu, Yamada; Hideo, Amaki; Tomoaki, Tamura
PATENT ASSIGNEE(S): Denso Corp., Japan
SOURCE: Fr. Demande, 75 pp.
CODEN: FRXXBL
DOCUMENT TYPE: Patent
LANGUAGE: French
FAMILY ACC. NUM. COUNT: 2
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
FR 2814284	A1	20020322	FR 2001-12110	20010919
JP 2002170541	A2	20020614	JP 2001-145341	20010515

PRIORITY APPLN. INFO.:

JP 2000-287145	A	20000921
JP 2001-145341	A	20010515
JP 2000-141476	A	20000515

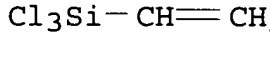
AB Non-swelling polymeric separators for **batteries** with **non-aq. electrolytes** are prepd. by crosslinking or modifying a porous polymer film with compds. that formed the crosslinks or added chains by at least 2 carbon atoms away from the linking units between the monomers (e.g., the ester linkage of polyesters). The polymeric film can be selected from

polybenzimidazoles, polyimides, polyether-polyimides, polyamide-polyimides, polyphenylene sulfides, polyphenylene oxides, polyether-polysulfones, polysulfones, polyether-polyketones, aramides, satd. polyesters, polyoxymethylenes, etc. Suitable crosslinking agents or modifiers include acrylates, vinyl compds., and functionalized (unsatd.) alkoxysilanes.

IT **75-94-5**, Vinyltrichlorosilane
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(crosslinking or modifying agent; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

RN 75-94-5 HCAPLUS

CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



IC H01M010-38

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38

ST nonswelling **battery** separator **nonaq electrolyte**; crosslinking modification polymeric **battery** separator **nonaq electrolyte**; polyester crosslinked film **battery** separator **nonaq electrolyte**

IT Polysiloxanes, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(acrylic, crosslinking or modifying agent; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT Polyamide fibers, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(aramid, crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT Polyesters, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(arom., Vylon KS001, crosslinked or modified, **battery** separators; polymeric porous films as separators for

batteries with **nonaq. electrolytes**)
IT Primary **battery** separators
Secondary **battery** separators
(crosslinked or modified polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)
IT Fluoropolymers, uses
Polyamides, uses
Polybenzimidazoles
Polyesters, uses
Polyimides, uses
Polyoxymethylenes, uses
Polyoxyphenylenes
Polysulfones, uses
Polythiophenylenes
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)
IT **Battery electrolytes**
(**nonaq.**; crosslinked or modified polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)
IT Polyimides, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polyamide-, crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)
IT Polyimides, uses
Polyketones
Polysulfones, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polyether-, crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)
IT Polyamides, uses
Polyethers, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polyimide-, crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)
IT Polyethers, uses

RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polyketone-, crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT Acrylic polymers, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polysiloxane-, crosslinking or modifying agent; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT Polyethers, uses
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(polysulfone-, crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT 2530-85-0, γ-(Methacryloxypropyl)trimethoxysilane
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(KBM503, crosslinking or modifying agent; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT 4369-14-6, 2-Propenoic acid, 3-(trimethoxysilyl)propyl ester
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(KBM5103, crosslinking or modifying agent; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT 1025-15-6, Triallyl isocyanurate
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(TAIC, crosslinking or modifying agent; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

IT 9016-80-2, Poly(methylpentene) 9020-73-9, Polyethylene naphthalate 24937-79-9, Poly(vinylidene fluoride) 24968-11-4, Polyethylene naphthalate 24968-12-5, Polybutylene terephthalate 25038-59-9, Polyethylene terephthalate, uses 26062-94-2, Polybutylene terephthalate 28779-82-0, Polybutylene naphthalate 51806-50-9, Polybutylene naphthalate
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(crosslinked or modified, **battery** separators; polymeric porous films as separators for **batteries** with

nonaq. electrolytes)

IT **75-94-5**, Vinyltrichlorosilane 78-08-0, Vinyltriethoxysilane 97-90-5, Ethylene glycol dimethacrylate 131-17-9, Diallyl phthalate 1067-53-4, Vinyltris(β-methoxyethoxy)silane 1321-74-0, Divinylbenzene, uses 1337-81-1, Vinylpyridine 2768-02-7, Vinyltrimethoxysilane 3030-60-2, Allyl isocyanurate 3290-92-4, Trimethylolpropane trimethacrylate 6294-79-7, Diallyl isocyanurate 21142-29-0, γ-(Methacryloxypropyl)triethoxysilane 25013-15-4, Vinyltoluene 65100-04-1, γ-(Methacryloxypropyl)methyldiethoxysilane
RL: DEV (Device component use); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(crosslinking or modifying agent; polymeric porous films as separators for **batteries** with **nonaq. electrolytes**)

L27 ANSWER 11 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:598346 HCAPLUS
DOCUMENT NUMBER: 135:155269
TITLE: **Nonaqueous electrolyte batteries** and their manufacture
INVENTOR(S): Yoshida, Yasuhiro; Hiroi, Osamu; Nakao, Yukiyasu; Shiota, Hisashi; Aihara, Shigeru; Takemura, Daigo; Urushibata, Hiroaki; Murai, Michio; Nishimura, Takashi; Aragane, Jun; Kurata, Tetsuyuki
PATENT ASSIGNEE(S): Mitsubishi Denki K. K., Japan
SOURCE: PCT Int. Appl., 23 pp.
CODEN: PIXXD2
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2001059871	A1	20010816	WO 2000-JP736	200002 10
W: JP, KR, US RW: DE, FR				
EP 1184927	A1	20020306	EP 2000-902897	200002 10

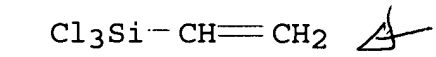
R: DE, FR
PRIORITY APPLN. INFO.: WO 2000-JP736 W 200002 10

AB The **batteries** have their electrodes and/or separators coated with a mixt. contg. **nonaq.** solvents, fine inorg. particles, and ≥1 of dewatering agents, hydrophobic agents, silylation agents, and coupling agents; and are prepd. by applying the mixt. on the electrodes and/or separators.

IT **75-94-5**, Vinyl trichlorosilane
RL: NUU (Other use, unclassified); USES (Uses)
(coupling agents in manuf. of secondary lithium **batteries** with inorg. powder coated electrodes and separators)

RN 75-94-5 HCAPLUS

CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



IC ICM H01M010-40
ICS H01M004-04; H01M006-14; H01M002-14

CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)

ST **nonaq battery** electrode separator hydrophobic coating; inorg powder coating **nonaq battery** electrode separator

IT Secondary **batteries**
(lithium; manuf. of secondary lithium **batteries** with inorg. powder coated electrodes and separators)

IT **Battery** electrodes
Secondary **battery** separators
(manuf. of secondary lithium **batteries** with inorg. powder coated electrodes and separators)

IT **75-94-5**, Vinyl trichlorosilane 999-97-3, Hexamethyldisilazane 2530-85-0, γ-(Methacryloxypropyl)trimethoxysilane 3068-76-6, N-Phenyl-γ-aminopropyltrimethoxysilane
RL: NUU (Other use, unclassified); USES (Uses)
(coupling agents in manuf. of secondary lithium **batteries** with inorg. powder coated electrodes and separators)

IT 7440-44-0, Carbon, uses 9003-07-0, Polypropylene 12190-79-3, Cobalt lithium oxide (CoLiO2)
RL: DEV (Device component use); PEP (Physical, engineering or

chemical process); PROC (Process); USES (Uses)
(manuf. of secondary lithium **batteries** with inorg. powder coated electrodes and separators)

IT 1344-28-1, Alumina, uses
RL: MOA (Modifier or additive use); USES (Uses)
(manuf. of secondary lithium **batteries** with inorg. powder coated electrodes and separators)

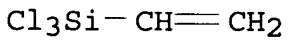
IT 68-12-2, DMF, uses
RL: NUU (Other use, unclassified); USES (Uses)
(**nonaq.** solvent in manuf. of secondary lithium **batteries** with inorg. powder coated electrodes and separators)

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

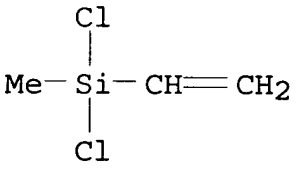
L27 ANSWER 12 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 2001:270894 HCAPLUS
DOCUMENT NUMBER: 135:61379
TITLE: Electrochemical Synthesis of Functional Aryl- and Heteroarylchlorosilanes. Application to the Preparation of Donor-Acceptor or Donor-Donor Organosilicon Molecules
AUTHOR(S): Moreau, Carole; Serein-Spirau, Francoise; Bordeau, Michel; Biran, Claude
CORPORATE SOURCE: Laboratoire de Chimie Organique et Organometallique, UMR 5802 CNRS Universite Bordeaux 1, Talence, F-33405, Fr.
SOURCE: Organometallics (2001), 20(10), 1910-1917
CODEN: ORGND7; ISSN: 0276-7333
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 135:61379

AB 44A variety of functional aryl- and heteroarylchlorosilanes were prepd. by electrochem. redn. of halothiophenes, halofurans, halopyridines, and substituted aryl halides in the presence of a large excess of com. organodi- or trichlorosilanes using an undivided cell, a sacrificial Mg or Al anode, a const. c.d., and tetrabutylammonium bromide as the supporting **electrolyte.** New structures are described, and some examples of the use of these more elaborate chlorosilanes are given, particularly as interesting precursors for the prepn. of polarized D-A and D-D organosilicon models. Thus, **electrolysis** of 2-bromothiophene contg. Mg or Al anode in the presence of THF/HMPA/Bu4NBr and Me2SiCl2 gave 88%

2-thienylchlorodimethylsilane.
IT **75-94-5**, Vinyltrichlorosilane **124-70-9**,
Dichloro(methyl)vinylsilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. synthesis of functional aryl- and heteroarylchlorosilanes. and application to prepn. of donor-acceptor or donor-donor organosilicon mols.)
RN 75-94-5 HCAPLUS
CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



RN 124-70-9 HCAPLUS
CN Silane, dichloroethenylmethyl- (9CI) (CA INDEX NAME)



CC 29-6 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 21, 72
IT 75-78-5, Dichlorodimethylsilane 75-79-6, Methyltrichlorosilane
75-94-5, Vinyltrichlorosilane 96-43-5, 2-Chlorothiophene
100-00-5, 1-Chloro-4-nitrobenzene 109-04-6, 2-Bromopyridine
124-70-9, Dichloro(methyl)vinylsilane 149-74-6,
Dichloro(methyl)phenylsilane 402-43-7, 1-Bromo-4-trifluoromethylbenzene 460-00-4, 1-Bromo-4-fluorobenzene
584-12-3, 2-Bromofuran 586-77-6, 1-Bromo-4-dimethylaminobenzene
586-78-7, 1-Bromo-4-nitrobenzene 626-55-1, 3-Bromopyridine
1003-09-4, 2-Bromothiophene 3141-27-3, 2,5-Dibromothiophene
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. synthesis of functional aryl- and heteroarylchlorosilanes. and application to prepn. of donor-acceptor or donor-donor organosilicon mols.)
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

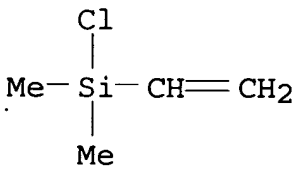
L27 ANSWER 13 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 2000:131373 HCAPLUS
DOCUMENT NUMBER: 132:200258
TITLE: Effect of surface modifications on spectral shift of electroluminescence of porous n-Si in S2O82- under cathodic bias
AUTHOR(S): Lee, Hyun-Gon; Park, Heung-Shik; Lim, Hyun-Eui; Lee, Yeonhee; Kim, Kang-Jin
CORPORATE SOURCE: Department of Chemistry, Korea University, Seoul, 136-701, S. Korea
SOURCE: Journal of the Electrochemical Society (2000), 147(2), 650-654
CODEN: JESOAN; ISSN: 0013-4651
PUBLISHER: Electrochemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The spectral shifts of visible electroluminescence from chem. modified porous Si under cathodic bias in an **electrolyte** contg. S2O82- were studied by luminescence and FTIR measurements. Modification of porous Si with sol. polyaniline and silane compds. results in blueshifts, whereas red shifts are obsd. with H+ and O+ ion implantations. Based on a recently proposed mechanism that silicon hydride acts as an electron injector to sulfate radical anion, the blueshift is linked to the lowering of the energy levels of silicon hydrides on the porous Si surface with the bandedges being invariant with the chem. modifications. The red shift is seen as a result of the conversion of silicon dihydride to silicon monohydride, with the energy levels of silicon monohydride lying higher than silicon dihydride.

IT **1719-58-0**, Chlorodimethylvinylsilane
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(spectral shifts of visible electroluminescence from vapor phase chlorodimethylvinylsilane modified porous Si under cathodic bias in **electrolyte** contg. S2O82-)

RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 36, 73

IT Silanes
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(spectral shifts of visible electroluminescence from vapor phase organosilane modified porous Si under cathodic bias in **electrolyte** contg. S2O82-)

IT 12408-02-5, Hydrogen ion, uses
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(electroluminescence of H+-implanted porous Si under cathodic bias in **electrolyte** contg. S2O82-)

IT 14581-93-2, Oxygen, ion O1+), uses
RL: MOA (Modifier or additive use); PRP (Properties); USES (Uses)
(electroluminescence of O1+-implanted porous Si under cathodic bias in **electrolyte** contg. S2O82-)

IT 25233-30-1, Polyaniline
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(spectral shifts of visible electroluminescence from polyaniline modified porous Si under cathodic bias in **electrolyte** contg. S2O82-)

IT 18162-84-0, Chlorodimethyloctylsilane
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(spectral shifts of visible electroluminescence from vapor phase chlorodimethyloctylsilane modified porous Si under cathodic bias in **electrolyte** contg. S2O82-)

IT **1719-58-0**, Chlorodimethylvinylsilane
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(spectral shifts of visible electroluminescence from vapor phase chlorodimethylvinylsilane modified porous Si under cathodic bias in **electrolyte** contg. S2O82-)

IT 18419-53-9, Chlorodiphenylvinylsilane
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(spectral shifts of visible electroluminescence from vapor phase chlorodiphenylvinylsilane modified porous Si under cathodic bias in **electrolyte** contg. S2O82-)

IT 75-77-4, Chlorotrimethylsilane, uses
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(spectral shifts of visible electroluminescence from vapor phase chlorotrimethylsilane modified porous Si under cathodic bias in

electrolyte contg. S2082-)
REFERENCE COUNT: 38 THERE ARE 38 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 14 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1999:390273 HCAPLUS
DOCUMENT NUMBER: 131:21352
TITLE: Manufacture of **electrolytes** and secondary **batteries**
INVENTOR(S): Yamamoto, Tomoya; Kawakami, Soichiro
PATENT ASSIGNEE(S): Canon K. K., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 14 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

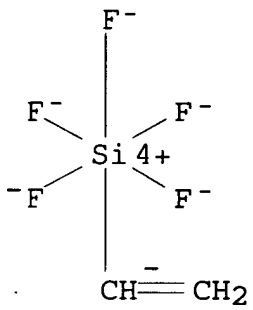
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11162508	A2	19990618	JP 1998-271586	19980925
JP 3428910	B2	20030722		
US 6277525	B1	20010821	US 1998-159572	19980924
PRIORITY APPLN. INFO.:			JP 1997-259996 A	19970925

AB The org. F and Si contg. salt **electrolytes** are prepd. by reacting at least an org. silane with a fluoro compd. in a **nonaq.** solvent based medium. Secondary Li **batteries** are prepd. by using the **electrolytes.**
IT **226724-11-4P**
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(intermediates in manuf. of org. fluorine and silicon contg. salts for **electrolytes** for secondary lithium **batteries**)
RN 226724-11-4 HCAPLUS
CN Ethanaminium, N,N,N-triethyl-, (OC-6-21)-

ethenylpentafluorosilicate(2-) (2:1) (9CI) (CA INDEX NAME)

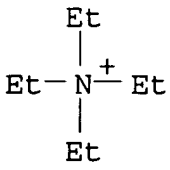
CM 1

CRN 27900-02-3
CMF C2 H3 F5 Si
CCI CCS

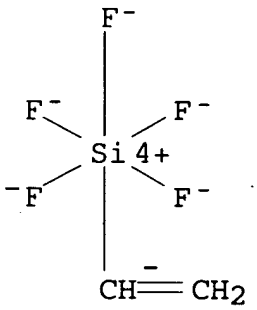


CM 2

CRN 66-40-0
CMF C8 H20 N



IT **226724-03-4P**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manuf. of org. fluorine and silicon contg. salts for **electrolytes** for secondary lithium **batteries**)
RN 226724-03-4 HCAPLUS
CN Silicate(2-), ethenylpentafluoro-, dilithium, (OC-6-21)- (9CI) (CA INDEX NAME)



●2 Li^+

IC ICM H01M010-40
CC **52-2** (Electrochemical, Radiational, and Thermal Energy Technology)
ST secondary lithium **battery electrolyte** manuf; fluoro silicon salt **electrolyte** lithium **battery**
IT **Battery electrolytes**
(manuf. of org. fluorine and silicon contg. salts for **electrolytes** for secondary lithium **batteries**)
IT 76-86-8, Triphenyl chlorosilane 78-08-0, Vinyl triethoxysilane 80-10-4 429-41-4, Tetrabutylammonium fluoride 665-46-3, Tetraethylammonium fluoride 780-69-8, Phenyl triethoxy silane 3027-21-2, Dimethoxy methyl phenyl silane 7789-24-4, Lithium fluoride, reactions 12125-01-8, Ammonium fluoride ((NH4)F) 17689-77-9
RL: RCT (Reactant); RACT (Reactant or reagent)
(in manuf. of org. fluorine and silicon contg. salts for **electrolytes** for secondary lithium **batteries**)
IT 91811-92-6P 189008-37-5P 226724-05-6P 226724-06-7P 226724-07-8P **226724-11-4P**
RL: IMF (Industrial manufacture); PEP (Physical, engineering or chemical process); PREP (Preparation); PROC (Process)
(intermediates in manuf. of org. fluorine and silicon contg. salts for **electrolytes** for secondary lithium **batteries**)
IT 188953-21-1P 226724-00-1P 226724-01-2P **226724-03-4P**
RL: DEV (Device component use); IMF (Industrial manufacture); PREP (Preparation); USES (Uses)
(manuf. of org. fluorine and silicon contg. salts for

electrolytes for secondary lithium **batteries**)

IT 60-29-7, Diethyl ether, uses 67-68-5, Dmso, uses 75-05-8, Acetonitrile, uses 78-93-3, Ethyl methyl ketone, uses 108-90-7, Chlorobenzene, uses
RL: NUU (Other use, unclassified); USES (Uses)
(solvents in manuf. of org. fluorine and silicon contg. salts for **electrolytes** for secondary lithium **batteries**)

L27 ANSWER 15 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:715934 HCAPLUS
DOCUMENT NUMBER: 129:333323
TITLE: Carbonaceous active material for lithium-ion **battery** anodes and its manufacture
INVENTOR(S): Barker, Jeremy; Koksbang, Rene
PATENT ASSIGNEE(S): Valence Technology Inc, USA
SOURCE: U.S., 10 pp.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

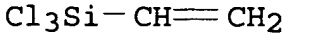
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 5830602	A	19981103	US 1997-802977	19970220

PRIORITY APPLN. INFO.: US 1997-802977 19970220

AB The active material contg. a dopant is prepd. by providing vinyl monomers CH2CH(G), where G represents a pendant group comprising ≥1 element different from C; electropolymg. the monomers; and heating the obtained polymer to pyrolyze the polymer. In the obtained carbonaceous active material, C constitutes the largest wt. portion and the ≥1 element constitutes the 2nd largest wt. portion.

IT **75-94-5**, Vinyltri(chloro)silane
RL: NUU (Other use, unclassified); USES (Uses)
(in manuf. of carbonaceous active material for lithium-ion **battery** anodes)

RN 75-94-5 HCAPLUS
CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



IC ICM H01M004-58
INCL 429218000
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 72
ST carbonaceous active material lithium ion **battery**;
battery anode lithium ion carbonaceous material
IT **Battery** anodes
(dopant-contg. carbonaceous active material for lithium-ion)
IT Carbonaceous materials (technological products)
RL: DEV (Device component use); SPN (Synthetic preparation); PREP (Preparation); USES (Uses)
(lithium-ion **battery** anodes from dopant-contg.)
IT **75-94-5**, Vinyltri(chloro)silane 77-77-0, Vinyl sulfone 88-12-0, 1-Vinyl-2-pyrrolidinone, uses 100-43-6, 4-Vinylpyridine 100-69-6, 2-Vinylpyridine 105-38-4, Vinyl propionate 754-05-2, Vinyltri(methyl)silane 2768-02-7, Vinyltri(methoxy)silane 3485-84-5, n-Vinylphthalimide 4177-16-6, 2-Vinylpyrazine 18666-68-7, Vinyltri(phenyl)silane 29383-23-1, Vinylimidazole 56512-51-7, Vinylglycine
RL: NUU (Other use, unclassified); USES (Uses)
(in manuf. of carbonaceous active material for lithium-ion **battery** anodes)
REFERENCE COUNT: 25 THERE ARE 25 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 16 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:594806 HCAPLUS
DOCUMENT NUMBER: 129:247668
TITLE: Hydrogen-absorbing alloy powders surface treated with coupling agents and manufacture of hydrogen-absorbing anodes
INVENTOR(S): Ikishima, Kenji; Kaminaka, Hideya
PATENT ASSIGNEE(S): Sumitomo Metal Industries, Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

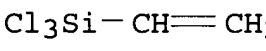
PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 10241678	A2	19980911	JP 1997-43891	19970227
PRIORITY APPLN. INFO.:			JP 1997-43891	19970227

AB Claimed H-absorbing alloy powders are surface treated with silane-based or Ti-based coupling agents. The title anodes are manufd. by coating substrates with slurries or pastes contg. binders and dispersed with the above alloy powders and then rolling the coated materials. Resulting **batteries** have high filling d. and discharge capacity and prevent exfoliation of active mass.

IT **75-94-5**, Vinyltrichlorosilane
RL: MOA (Modifier or additive use); USES (Uses)
(addn. of silane- or titanium-type coupling agents in manuf. of hydrogen-absorbing alloy anodes for **batteries**)

RN 75-94-5 HCAPLUS

CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



IC ICM H01M004-38
ICS B22F001-00; C22C019-00; H01M004-26; H01M004-62

CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 56

ST coupling agent hydrogen absorbing anode **battery**; silane coupling agent hydrogen absorbing alloy; titanium coupling agent hydrogen absorbing alloy

IT **Battery** anodes
Coupling agents
(addn. of silane- or titanium-type coupling agents in manuf. of hydrogen-absorbing alloy anodes for **batteries**)

IT 181147-99-9
RL: DEV (Device component use); PEP (Physical, engineering or chemical process); TEM (Technical or engineered material use); PROC (Process); USES (Uses)
(addn. of silane- or titanium-type coupling agents in manuf. of hydrogen-absorbing alloy anodes for **batteries**)

IT **75-94-5**, Vinyltrichlorosilane 78-08-0, Vinyltriethoxysilane 919-30-2, γ-Aminopropyltriethoxysilane 1760-24-3, N-(β-Aminoethyl)-γ-aminopropyltrimethoxysilane 2530-87-2, γ-Chloropropyltrimethoxysilane 7787-93-1 18171-19-2, γ-Chloropropylmethyldimethoxysilane 61417-49-0, Isopropyltriisostearoyltitanate 61436-47-3, Isopropyl tris(dioctylphosphato)titanate 64060-97-5 64157-14-8, Tetra(2,2-diallyloxymethyl-1-butyl)bis(di-tridecyl)phosphitetitanate 90959-84-5 91858-93-4
RL: MOA (Modifier or additive use); USES (Uses)
(addn. of silane- or titanium-type coupling agents in manuf. of hydrogen-absorbing alloy anodes for **batteries**)

IT 1333-74-0, Hydrogen, uses
RL: DEV (Device component use); USES (Uses)
(alloys contg. absorbed; addn. of silane- or titanium-type coupling agents in manuf. of hydrogen-absorbing alloy anodes for **batteries**)

L27 ANSWER 17 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:358251 HCAPLUS
DOCUMENT NUMBER: 129:97638
TITLE: ORMOCERs as inorganic-organic **electrolytes** for new solid state lithium **batteries** and supercapacitors
AUTHOR(S): Popall, M.; Andrei, M.; Kappel, J.; Kron, J.; Olma, K.; Olsowski, B.
CORPORATE SOURCE: Fraunhofer-Inst. Silicatforschung, Wurzburg, D-97082, Germany
SOURCE: Electrochimica Acta (1998), 43(10-11), 1155-1161
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

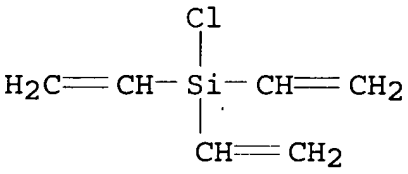
AB ORMOCERs (ORganically MOdified CERamics) are inorg.-org. copolymers which are synthesized as matrix for Li-ion conduction. The inorg. oxidic backbone of these materials results from polycondensation of alkoxy compds. whereas the org. network is formed from reactive functional groups R' of alkoxysilanes of the type R'Si(OR)3, or by co-polymg. reactive org. monomers with reactive functionalized alkoxysilanes. Depending on the reactive org. functionalities and their thermal and UV-initiated org. crosslinking reactions the materials were adapted to the needs of **battery** and supercapacitor manufg. For ionic cond. polyethers with different chain lengths and functionalized (e.g. epoxy) termination sites were synthesized and attached to organically functionalized oxidic

oligomers. Conductivities of up to 10-4 Ω-1 cm-1 at room temp. were achieved without plasticizer. The **electrolytes** form an amorphous network with configuration temps. (according to Vogel-Tammann-Fulcher) close to -80°, several degrees below the transformation temp. (measured by DSC) in agreement with conventional configuration theory. The activation energies correlate favorably with results for good polymer **electrolytes.**

IT **1871-21-2**, Chlorotrivinylsilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

RN 1871-21-2 HCAPLUS

CN Silane, chlorotriethenyl- (9CI) (CA INDEX NAME)



CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 57, 76

ST **battery** supercapacitor **electrolyte** organically modified ceramic

IT Polyoxyalkylenes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(**electrolyte** contg.; organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT Polysiloxanes, preparation
Polysiloxanes, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(epoxy; organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT Secondary **batteries**
(lithium; organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT **Battery electrolytes**
Ceramics

Electric conductivity
Hydrolysis
Ionic conductivity
(organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT Epoxy resins, preparation
Epoxy resins, preparation
RL: SPN (Synthetic preparation); PREP (Preparation)
(polysiloxane-; organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT Capacitors
(super-; organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT 7791-03-9P, Lithium perchlorate 25322-68-3P, Peo
RL: SPN (Synthetic preparation); PREP (Preparation)
(**electrolyte** contg.; organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT 12125-01-8, Ammonium fluoride
RL: CAT (Catalyst use); USES (Uses)
(organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT **1871-21-2**, Chlorotrivinylsilane 2530-83-8, 3-Glycidyloxypropyltrimethoxysilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

IT 56325-93-0P, 3-Glycidyloxypropyltrimethoxysilane homopolymer
RL: SPN (Synthetic preparation); PREP (Preparation)
(organically modified ceramics as inorg.-org. **electrolytes** for new solid state lithium **batteries** and supercapacitors)

REFERENCE COUNT: 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 18 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:358225 HCAPLUS
DOCUMENT NUMBER: 129:97635
TITLE: Towards solid state lithium **batteries**

based on ORMOCER **electrolytes**

AUTHOR(S): Skaarup, Steen; West, Keld; Zachau-Christiansen, Birgit; Popall, Michael; Kappel, Jurgen; Kron, Johanna; Eichinger, Gunther; Semrau, Gunther

CORPORATE SOURCE: Departments of Physics and of Chemistry, Technical University of Denmark, Lyngby, DK-2800, Den.

SOURCE: Electrochimica Acta (1998), 43(10-11), 1589-1592
CODEN: ELCAAV; ISSN: 0013-4686

PUBLISHER: Elsevier Science Ltd.

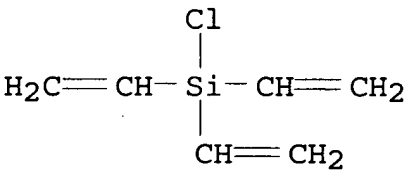
DOCUMENT TYPE: Journal

LANGUAGE: English

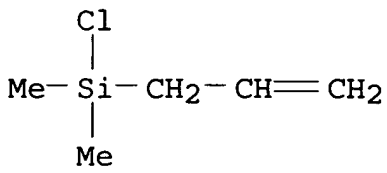
AB ORMOCER polymer **electrolytes** have been tested both as separator **electrolytes**, and as binder **electrolyte** in composite cathodes of lithium secondary **batteries.** The interface stability towards metallic lithium has been strongly improved by careful control of purity and conditions during polymn. About 900 cycles have been obtained with utilizations decreasing from 65 to 25% with the total discharge capacity corresponding to 330 full discharges. The charge factor during long term cycling is very close to 1 (1.004 ± 0.006), indicating that the amt. of parasitic side reactions can be minimal.

IT **1871-21-2**, ChlorotriVinylsilane **4028-23-3**, Allyl dimethylchlorosilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(solid state lithium **batteries** based on organically modified ceramic **electrolytes**)

RN 1871-21-2 HCAPLUS
CN Silane, chlorotriethenyl- (9CI) (CA INDEX NAME)



RN 4028-23-3 HCAPLUS
CN Silane, chlorodimethyl-2-propenyl- (9CI) (CA INDEX NAME)



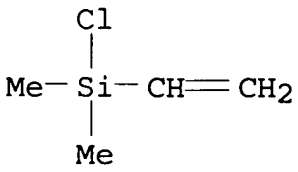
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 38, 57
ST **battery electrolyte** separator organically modified ceramic
IT Secondary **batteries**
(lithium; solid state lithium **batteries** based on organically modified ceramic **electrolytes**)
IT **Battery electrolytes**
Ceramic composites
Electric impedance
Hydrolysis
Secondary **battery** separators
Sol-gel processing
(solid state lithium **batteries** based on organically modified ceramic **electrolytes**)
IT Polyoxyalkylenes, uses
RL: MOA (Modifier or additive use); USES (Uses)
(solid state lithium **batteries** based on organically modified ceramic **electrolytes**)
IT 12162-79-7, Lithium manganese oxide limno2
RL: DEV (Device component use); USES (Uses)
(cathodes; solid state lithium **batteries** based on organically modified ceramic **electrolytes**)
IT 24991-55-7, Polyethyleneglycol dimethyl ether 25322-68-3
RL: MOA (Modifier or additive use); USES (Uses)
(solid state lithium **batteries** based on organically modified ceramic **electrolytes**)
IT **1871-21-2**, ChlorotriVinylsilane 2530-83-8, 3-Glycidoxypropyltrimethoxysilane **4028-23-3**, Allyl dimethylchlorosilane 7791-03-9, Lithium perchlorate 33454-82-9, Lithium trifluoromethanesulfonate
RL: RCT (Reactant); RACT (Reactant or reagent)
(solid state lithium **batteries** based on organically modified ceramic **electrolytes**)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L27 ANSWER 19 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1998:13791 HCAPLUS
DOCUMENT NUMBER: 128:91057
TITLE: Electrodes for lithium-ion **batteries** using polysiloxanes
INVENTOR(S): Eguchi, Katsuya; Dahn, Jeffery Raymond; Wilson, Alf M.; Xing, Weibing; Zank, Gregg Alan
PATENT ASSIGNEE(S): Dow Corning Corporation, USA
SOURCE: Eur. Pat. Appl., 19 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 813258	A1	19971217	EP 1997-303911	19970606
R: DE, FR, GB				
US 5824280	A	19981020	US 1996-664278	19960611
CA 2207290	AA	19971211	CA 1997-2207290	19970609
JP 10074506	A2	19980317	JP 1997-153426	19970611
PRIORITY APPLN. INFO.:			US 1996-664278 A	19960611

AB The electrodes formed by the pyrolyzing a siloxane polymer (RR1R2SiO1/2)w(R3R4SiO)p(R5SiO3/2)q(SiO4/2)r at 700-1400°to form a ceramic material and by introducing Li ions into the formed material. R, R1, R2, R3, R4, and R5 are independently selected from H atom or C1-20 hydrocarbons, w is ≤0.8, p is ≤0.9, q is at ≤0.9, r is ≤0.9, and w + p + q + r = 1.
IT **1719-58-0DP**, Chlorodimethylvinylsilane, reaction products with siloxanes
RL: PEP (Physical, engineering or chemical process); PNU

(Preparation, unclassified); PREP (Preparation); PROC (Process)
(electrodes for lithium-ion **batteries** using pyrolyzed)
RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)

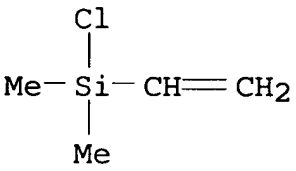


IC ICM H01M004-58
CC 52-2 (Electrochemical, Radiational, and Thermal Energy Technology)
Section cross-reference(s): 37, 57
ST polysiloxane pyrolysis lithium ion **battery** electrode;
ceramics polysiloxane pyrolysis lithium **battery** electrode
IT Ceramics
(electrodes for lithium-ion **batteries** using
lithium-intercalatable pyrolyzed polysiloxane)
IT **Battery** anodes
(lithium-intercalatable pyrolyzed polysiloxane)
IT Polysiloxanes, preparation
RL: PEP (Physical, engineering or chemical process); PNU
(Preparation, unclassified); PREP (Preparation); PROC (Process)
(polysilalkylene-; electrodes for lithium-ion **batteries**
using pyrolyzed)
IT Polycarbosilanes
Polycarbosilanes
RL: PEP (Physical, engineering or chemical process); PNU
(Preparation, unclassified); PREP (Preparation); PROC (Process)
(polysilalkylenes, siloxane-; electrodes for lithium-ion
batteries using pyrolyzed)
IT Polysiloxanes, preparation
RL: PEP (Physical, engineering or chemical process); PNU
(Preparation, unclassified); PREP (Preparation); PROC (Process)
(polysilphenylene-; electrodes for lithium-ion **batteries**
using pyrolyzed)
IT Polycarbosilanes
Polycarbosilanes
RL: PEP (Physical, engineering or chemical process); PNU
(Preparation, unclassified); PREP (Preparation); PROC (Process)
(polysilphenylenes, siloxane-; electrodes for lithium-ion
batteries using pyrolyzed)

IT **1719-58-0DP**, Chlorodimethylvinylsilane, reaction products with siloxanes 2627-95-4DP, 1,1,3,3-Tetramethyl-1,3-divinyldisiloxane, reaction products with siloxanes 3277-26-7DP, 1,1,3,3-Tetramethyldisiloxane, reaction products with siloxanes 15545-80-9DP, 1,1,3,3-Tetraphenyldisiloxane, reaction products with siloxanes 17306-05-7DP, reaction products with siloxanes 18769-05-6DP, reaction products with siloxanes 25498-03-7DP, Methyltrimethoxysilane homopolymer, vinyl-terminated 29382-69-2DP, Vinyltrimethoxysilane homopolymer, vinyl-terminated 89885-26-7DP, Phenyltrimethoxysilane homopolymer, vinyl-terminated 162816-07-1DP, Methyltrimethoxysilane-phenyltrimethoxysilane copolymer, vinyl-terminated 174305-53-4DP, trimethylsilyl-terminated 200959-33-7P 200959-35-9P 200959-36-0DP, vinyl-terminated
RL: PEP (Physical, engineering or chemical process); PNU (Preparation, unclassified); PREP (Preparation); PROC (Process)
(electrodes for lithium-ion **batteries** using pyrolyzed)

L27 ANSWER 20 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1997:743669 HCAPLUS
DOCUMENT NUMBER: 128:67667
TITLE: Cyclic voltammetric study of redox-active surfactant by hydrogel-modified electrode
AUTHOR(S): Takeoka, Yukikazu; Aoki, Takashi; Sanui, Kohei; Ogata, Naoya; Watanabe, Masayoshi
CORPORATE SOURCE: Department of Chemistry, Sophia University, Tokyo, 102, Japan
SOURCE: Polymer Gels and Networks (1997), 5(4), 369-383
CODEN: PGNEEI; ISSN: 0966-7822
PUBLISHER: Elsevier Science Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The dissolved states of redox-active non-ionic surfactant (FPEG) in the swollen state of N-iso-Pr acrylamide (NIPA) hydrogel were studied by using a gel-modified electrode. The pronounced decrease in the peak current and the neg. shift in the formal potential of cyclic voltammetry at the gel-modified electrode, as compared with the normal glassy carbon electrode, was obsd. in the micelle-soln.; this result indicates that the diffusive FPEG mols. which form the micelle hardly penetrate into the NIPA gel. This result suggests that there exists an interaction between FPEG mols. and the NIPA gel in the vicinity of the surface of the NIPA gel in the micelle-soln. However, this also indicates that a small amt. of FPEG mols. which can form micelles exists in the NIPA gel.
IT **1719-58-0**, Chlorodimethylvinylsilane

RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(silane coupler; in cyclic voltammetric study of redox-active surfactant by hydrogel-modified electrode)
RN 1719-58-0 HCAPLUS
CN Silane, chloroethenyldimethyl- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
IT **1719-58-0**, Chlorodimethylvinylsilane
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PRP (Properties); PROC (Process); USES (Uses)
(silane coupler; in cyclic voltammetric study of redox-active surfactant by hydrogel-modified electrode)
IT 7647-15-6, Sodium bromide, uses
RL: NUU (Other use, unclassified); PEP (Physical, engineering or chemical process); PROC (Process); USES (Uses)
(supporting **electrolyte**; cyclic voltammetric study of redox-active surfactant by hydrogel-modified electrode in soln. contg.)
REFERENCE COUNT: 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

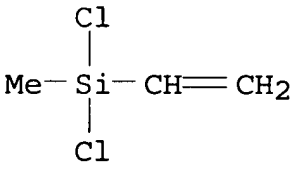
L27 ANSWER 21 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:585618 HCAPLUS
DOCUMENT NUMBER: 125:275968
TITLE: Electrochemical synthesis of bis(2-thienyl)silanes, 2-thienylchlorosilanes, bis(5-bromo-2-thienyl)silanes, and (5-bromo-2-thienyl)dimethylchlorosilane, precursors of poly[(silanylene)thiophene]s
AUTHOR(S): Moreau, Carole; Serein-Spirau, Francoise; Bordeau, Michel; Biran, Claude; Dunogues, Jacques
CORPORATE SOURCE: Laboratoire Chimie Organique Organometallique, Universite Bordeaux, Talance, F-33405, Fr.
SOURCE: Journal of Organometallic Chemistry (1996),

522(2), 213-221
CODEN: JORCAI; ISSN: 0022-328X
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English
OTHER SOURCE(S): CASREACT 125:275968

AB Bis(2-thienyl)silanes, e.g., bis(2-thienyl)dimethylsilane, and bis(5-bromo-2-thienyl)silanes were synthesized by electrochem. redn. of monohalothiophenes (Br, Cl) and 2,5-dibromothiophene resp. in the presence of a dichlorosilane in THF or DME, using an undivided cell, a sacrificial Mg or Al anode, a const. c.d. and Bu4NBr as the supporting **electrolyte.** When dichlorosilanes were used in large excess, halothiophenes underwent solely a monocoupling reaction leading selectivity to thienylchlorosilanes, which reveals the versatility of the electrochem. method.

IT **124-70-9**, Dichloromethylvinylsilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. redn. of halothiophenes in presence of chlorosilanes)

RN 124-70-9 HCAPLUS
CN Silane, dichloroethenylmethyl- (9CI) (CA INDEX NAME)



CC 29-6 (Organometallic and Organometalloidal Compounds)
Section cross-reference(s): 72

IT 75-78-5 80-10-4 96-43-5, 2-Chlorothiophene **124-70-9**, Dichloromethylvinylsilane 149-74-6 1003-09-4, 2-Bromothiophene 3141-27-3 7787-85-1, Dichloro(2-chloroethyl)methylsilane 13528-93-3, 1,2-Bis(chlorodimethylsilyl)ethane 18028-96-1
RL: RCT (Reactant); RACT (Reactant or reagent)
(electrochem. redn. of halothiophenes in presence of chlorosilanes)

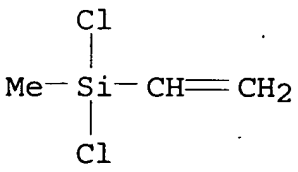
L27 ANSWER 22 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1996:27541 HCAPLUS
DOCUMENT NUMBER: 124:158593
TITLE: Electrochemically induced silylation of unsaturated compounds

AUTHOR(S): Jouikov, V.; Grigorieva, L.
CORPORATE SOURCE: Physical Chem. Dep., Kazan State Univ., Kazan, 420008, Russia
SOURCE: Electrochimica Acta (1996), 41(3), 469-70
CODEN: ELCAAV; ISSN: 0013-4686
PUBLISHER: Elsevier
DOCUMENT TYPE: Journal
LANGUAGE: English

AB Electroredn. of some alkylchlorosilanes in the presence of difficult to reduce unsatd. compds. (phenylacetylene, styrene, cyclohexene) results in silylated products where the multiple bond has either reduced multiplicity (hydrosilylation) or the same multiplicity (silylation) depending on the nature of the starting compds. and conditions of **electrolysis.**

IT **124-70-9**
RL: NUU (Other use, unclassified); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(in electrochem. silylation of styrene)

RN 124-70-9 HCAPLUS
CN Silane, dichloroethenylmethyl- (9CI) (CA INDEX NAME)



CC 72-2 (Electrochemistry)
Section cross-reference(s): 29

IT 75-78-5, Dichlorodimethylsilane **124-70-9** 10026-04-7, Silicon chloride sicl4
RL: NUU (Other use, unclassified); PRP (Properties); RCT (Reactant); RACT (Reactant or reagent); USES (Uses)
(in electrochem. silylation of styrene)

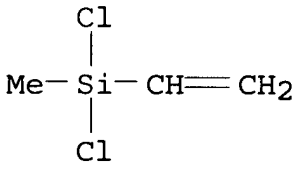
L27 ANSWER 23 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1993:104052 HCAPLUS
DOCUMENT NUMBER: 118:104052
TITLE: Molecular materials: a new type of polar membrane for the titration of ions
AUTHOR(S): Soulie, Corinne; Favier, Jean Claude; Hemery, Patrick; Simon, Jacques
CORPORATE SOURCE: CNRS, Paris, 75231, Fr.

SOURCE: Journal of Materials Chemistry (1992), 2(12), 1271-5
CODEN: JMACEP; ISSN: 0959-9428
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The synthesis of polar membranes having low glass transition temp. is described. They are obtained by room-temp. crosslinking of 2 cyanopropylsiloxane copolymers contg. .tplbond.SiCH:CH2 and .tplbond.SiH reactive groups. Conventional ionophores and **electrolytes** may be molecularly dissolved in the copolymers. The crosslinked membranes are used as a supporting matrix in ion-selective electrode devices. The best results are obtained when benzo-15-crown-5 is employed as ionophore.

IT **124-70-9**
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolytic polymn. of, for prepn. of polar membranes for titrn. of ions)

RN 124-70-9 HCAPLUS
CN Silane, dichloroethenylmethyl- (9CI) (CA INDEX NAME)



CC 38-3 (Plastics Fabrication and Uses)
Section cross-reference(s): 72

IT 143-66-8
RL: USES (Uses)
(**electrolyte**, polar siloxane membranes contg., for titrn. of ions)

IT 75-54-7 **124-70-9** 1190-16-5
RL: RCT (Reactant); RACT (Reactant or reagent)
(hydrolytic polymn. of, for prepn. of polar membranes for titrn. of ions)

L27 ANSWER 24 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1992:513684 HCAPLUS
DOCUMENT NUMBER: 117:113684
TITLE: Fluorocarbon-based polymer lamination coating film and method of manufacturing the same
INVENTOR(S): Soga, Mamoru; Mino, Norihisa; Ogawa, Kazufumi;

	Mochizuki, Yusuke; Shibata, Tsuneo
PATENT ASSIGNEE(S):	Matsushita Electric Industrial Co., Ltd., Japan
SOURCE:	Eur. Pat. Appl., 14 pp. CODEN: EPXXDW
DOCUMENT TYPE:	Patent
LANGUAGE:	English
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 484886	A1	19920513	EP 1991-118847	19911105
EP 484886	B1	19970312		
R: DE, FR, GB, IT				
US 5238746	A	19930824	US 1991-786824	19911101
CA 2054931	AA	19920507	CA 1991-2054931	19911105
CA 2054931	C	20000201		
JP 05064859	A2	19930319	JP 1991-288663	19911105
JP 2528228	B2	19960828		
US 5587209	A	19961224	US 1995-438875	19950510

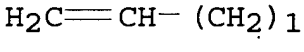
PRIORITY APPLN. INFO.:	JP 1990-302021	A	19901106
	US 1991-786824	A3	19911101
	US 1993-61284	B1	19930514
	US 1994-278126	B1	19940707

AB The title method of applying an antifriction layer with good adhesion without **electrolytic** etching of substrates selected from metal, ceramic, glass, or plastic comprises first applying on the substrate a polymer absorption intermediate layer having Si bonds from dehydrochlorination or dealcoholation of silane coupling compd. and then laminating with a crosslinkable F-based polymer. An Al plate was dipped into a soln. of ω-nonadecenyltrichlorsilane in hexadecene-CCl4-CHCl3, washed, spray coated with [(CF2CF2)8CH:CH]n, and baked at 380° and irradiated with electron beam.

IT **125282-19-1**
RL: USES (Uses)
(solns. of, for coating of aluminum before laminating with fluoropolymer layer)

RN 125282-19-1 HCAPLUS

CN Silane, trichloro-18-nonadecenyl- (9CI) (CA INDEX NAME)



IC ICM B05D001-20
ICS C09D127-12

CC 42-10 (Coatings, Inks, and Related Products)

IT **125282-19-1** 143257-37-8
RL: USES (Uses)
(solns. of, for coating of aluminum before laminating with fluoropolymer layer)

L27 ANSWER 25 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:161234 HCAPLUS

DOCUMENT NUMBER: 116:161234

TITLE: Electrochemical manufacture of disilane

INVENTOR(S): Shono, Tatsuya; Kashiwamura, Shigefumi; Nishida, Ryoichi

PATENT ASSIGNEE(S): Osaka Gas Co., Ltd., Japan

SOURCE: Jpn. Kokai Tokkyo Koho, 9 pp.
CODEN: JKXXAF

DOCUMENT TYPE: Patent

LANGUAGE: Japanese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 03264683	A2	19911125	JP 1990-158224	199006 15
JP 3016087	B2	20000306		
PRIORITY APPLN. INFO.:			JP 1990-9946 A1	199001 18

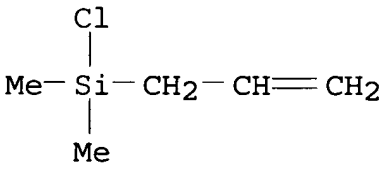
OTHER SOURCE(S): MARPAT 116:161234

AB A method for manufg. a disilane at a high yield involves a.c. or d.c. **electrolysis** of RR1R2SiX (R, R1, R2 = H, alkyl, aryl, alkoxy, amino; X = halo) using a Mg, Cu, Zn, Sn, or Al electrode(s). Addnl., ultrasound may be applied during the **electrolysis.**

IT **4028-23-3**, Allyldimethylchlorosilane
RL: RCT (Reactant); RACT (Reactant or reagent)
(**electrolysis** of)

RN 4028-23-3 HCAPLUS

CN Silane, chlorodimethyl-2-propenyl- (9CI) (CA INDEX NAME)



IC ICM C25B003-02
ICS C07F007-08

CC 72-9 (Electrochemistry)
Section cross-reference(s): 49

ST disilane manuf **electrolysis**

IT 75-77-4, Trimethylchlorosilane, reactions 76-86-8, Triphenylchlorosilane 768-33-2, Dimethylphenylchlorosilane 994-07-0, Methyldimethoxychlorosilane 1631-82-9, Phenylmethylchlorosilane **4028-23-3**, Allyldimethylchlorosilane 18162-84-0, Octyldimethylchlorosilane 139959-09-4
RL: RCT (Reactant); RACT (Reactant or reagent)
(**electrolysis** of)

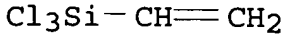
L27 ANSWER 26 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1992:135528 HCAPLUS
DOCUMENT NUMBER: 116:135528
TITLE: Performance-oriented packaging standards; changes to classification, hazard communication, packaging and handling requirements based on UN standards and agency initiative
CORPORATE SOURCE: United States Dept. of Transportation, Washington, DC, 20590-0001, USA
SOURCE: Federal Register (1990), 55(246), 52402-729, 21 Dec 1990
CODEN: FEREAC; ISSN: 0097-6326
DOCUMENT TYPE: Journal
LANGUAGE: English

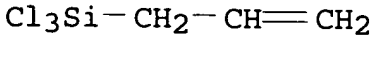
AB The hazardous materials regulations under the Federal Hazardous Materials Transportation Act are revised based on the United Nations recommendations on the transport of dangerous goods. The regulations cover the classification of materials, packaging requirements, and package marking, labeling, and shipping documentation, as well as transportation modes and handling, and incident reporting. Performance-oriented stds. are adopted for packaging for bulk and nonbulk transportation, and SI units of measurement generally replace US customary units. Hazardous material descriptions and proper shipping names are tabulated together with hazard class, identification nos., packing group, label required, special provisions, packaging authorizations, quantity limitations, and vessel stowage requirements.

IT **75-94-5**, Vinyltrichlorosilane **107-37-9**, Allyltrichlorosilane
RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(packaging and transport of, stds. for)

RN 75-94-5 HCAPLUS
CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



RN 107-37-9 HCAPLUS
CN Silane, trichloro-2-propenyl- (9CI) (CA INDEX NAME)



CC 59-6 (Air Pollution and Industrial Hygiene)
IT Adhesives
Alcoholic beverages
Ammunition
Antifreeze substances
Bactericides, Disinfectants, and Antiseptics
Batteries, primary
Blasting gelatin
Bombs (explosives)
Carbon paper
Cartridges
Castor bean
Coating materials
Corrosive substances
Cotton
Creosote
Detonators
Dyes
Dynamite
Electric fuses
Exothermic materials
Explosives
Flavoring materials
Flue dust
Fuel cells
Fuel oil
Fuels, diesel
Fuels, jet aircraft
Fusel oil
Fuses, explosives
Gas oils
Hay
Herbicides
Igniters and Lighters
Insecticides
Lacrimators
Magnetic substances
Matches
Oxidizing agents
Perfumes
Pesticides
Petroleum products
Pharmaceuticals
Photoelectric devices

Poisons
Primers, explosive
Projectiles
Pyrophoric substances
Pyrotechnic compositions
Radioactive substances
Refrigerating apparatus
Rockets
Shale oils
Solvent naphtha
Sprays
Straw
Textiles
Thermoelectric devices
Torpedoes (weapons)
Turpentine
Wood preservatives
(packaging and transport of, stds. for)

IT 50-00-0, Formaldehyde, miscellaneous 54-11-5, Nicotine 54-11-5D, Nicotine, compds. 55-63-0, Nitroglycerin 55-68-5, Phenylmercuric nitrate 56-18-8, 3,3'-Iminodipropylamine 56-23-5, miscellaneous 56-38-2, Parathion 57-06-7, Allyl isothiocyanate 57-14-7 57-24-9D, Strychnine, salts 60-00-4, EDTA, miscellaneous 60-24-2 60-29-7, Diethyl ether, miscellaneous 60-34-4, Methylhydrazine 60-57-1, Dieldrin 62-38-4, Phenylmercuric acetate 62-53-3, Aniline, miscellaneous 62-74-8, Sodium fluoroacetate 64-17-5, Ethanol, miscellaneous 64-18-6, Formic acid, miscellaneous 64-18-6D, Formic acid, chloro derivs. 64-19-7, Acetic acid, miscellaneous 64-67-5, Diethyl sulfate 66-25-1, Hexaldehyde 67-56-1, Methanol, miscellaneous 67-63-0, Isopropanol, miscellaneous 67-64-1, Acetone, miscellaneous 67-66-3, Chloroform, miscellaneous 68-11-1, Thioglycolic acid, miscellaneous 68-12-2, N,N-Dimethylformamide, miscellaneous 70-11-1, Phenacyl bromide 70-30-4, Hexachlorophene 71-23-8, n-Propanol, miscellaneous 71-41-0, 1-Pentanol, miscellaneous 71-43-2, Benzene, miscellaneous 71-55-6, 1,1,1-Trichloroethane 74-82-8, Methane, miscellaneous 74-83-9, miscellaneous 74-84-0, Ethane, miscellaneous 74-85-1, Ethylene, miscellaneous 74-86-2, Acetylene, miscellaneous 74-87-3, Methyl chloride, miscellaneous 74-88-4, Methyl iodide, miscellaneous 74-89-5, Methylamine, miscellaneous 74-90-8, Hydrogen cyanide, miscellaneous 74-93-1, Methyl mercaptan, miscellaneous 74-95-3, Dibromomethane 74-96-4, Ethyl bromide 74-97-5, Bromochloromethane 74-98-6, Propane, miscellaneous 75-00-3, Ethyl chloride 75-01-4, miscellaneous 75-02-5, Vinyl fluoride 75-04-7, Ethylamine, miscellaneous

75-05-8, Methyl cyanide, miscellaneous 75-07-0, Acetaldehyde, miscellaneous 75-08-1, Ethyl mercaptan 75-09-2, Dichloromethane, miscellaneous 75-15-0, Carbon disulfide, miscellaneous 75-16-1, Methyl magnesium bromide 75-18-3, Dimethyl sulfide 75-19-4, Cyclopropane 75-20-7, Calcium carbide 75-21-8, Ethylene oxide, miscellaneous 75-21-8 75-25-2, Bromoform 75-26-3, 2-Bromopropane 75-28-5, Isobutane 75-28-5D, Isobutane, mixts. 75-29-6, 2-Chloropropane 75-31-0, Isopropylamine, miscellaneous 75-33-2, Isopropyl mercaptan 75-34-3, 1,1-Dichloroethane 75-35-4, miscellaneous 75-36-5, Acetyl chloride 75-38-7, 1,1-Difluoroethylene 75-39-8, Acetaldehyde ammonia 75-43-4, Dichloromonofluoromethane 75-44-5, Phosgene 75-45-6, Chlorodifluoromethane 75-46-7, Trifluoromethane 75-50-3, Trimethylamine, miscellaneous 75-52-5, Nitromethane, miscellaneous 75-54-7, Methyldichlorosilane 75-55-8, Propylenimine 75-56-9, Propylene oxide, miscellaneous 75-59-2, Tetramethylammonium hydroxide 75-60-5, Cacodylic acid 75-61-6, Dibromodifluoromethane 75-63-8 75-71-8, Dichlorodifluoromethane 75-72-9, Chlorotrifluoromethane 75-73-0, Tetrafluoromethane 75-76-3, Tetramethylsilane 75-77-4, Trimethylchlorosilane, miscellaneous 75-78-5, Dimethyldichlorosilane 75-79-6, Methyltrichlorosilane 75-83-2 75-86-5, Acetone cyanohydrin 75-87-6, Chloral 75-91-2, tert-Butyl hydroperoxide **75-94-5** , Vinyltrichlorosilane 76-01-7, Pentachloroethane 76-02-8, Trichloroacetyl chloride 76-03-9, properties 76-05-1, Trifluoroacetic acid, miscellaneous 76-06-2, Chloropicrin 76-06-2D, Chloropicrin, mixts. 76-15-3 76-16-4, Hexafluoroethane 76-19-7, Octafluoropropane 76-22-2, Camphor 77-47-4, Hexachlorocyclopentadiene 77-73-6 77-78-1, Dimethyl sulfate 78-00-2, Tetraethyl lead 78-10-4, Tetraethyl silicate 78-62-6, Dimethyldiethoxysilane 78-67-1, Azodiisobutyronitrile 78-76-2, 2-Bromobutane 78-78-4, Isopentane 78-79-5, Isoprene, miscellaneous 78-81-9, Isobutylamine 78-82-0, Isobutyronitrile 78-83-1, Isobutanol, miscellaneous 78-84-2, Isobutyraldehyde 78-85-3, Methacrylaldehyde 78-87-5, Propylene dichloride 78-89-7, Propylene chlorohydrin 78-90-0, 1,2-Propylenediamine 78-93-3, 2-Butanone, miscellaneous 78-94-4, Methyl vinyl ketone, miscellaneous 78-95-5, Monochloroacetone 79-01-6, Trichloroethylene, miscellaneous 79-03-8, Propionyl chloride 79-04-9, Chloroacetyl chloride 79-06-1, Acrylamide, miscellaneous 79-08-3, Bromoacetic acid 79-09-4, Propionic acid, miscellaneous 79-10-7, 2-Propenoic acid, miscellaneous 79-11-8, Chloroacetic acid, miscellaneous 79-20-9, Methyl acetate 79-21-0, Peroxyacetic acid 79-22-1 79-24-3, Nitroethane 79-29-8, 2,3-Dimethylbutane 79-30-1, Isobutyryl chloride 79-31-2,

Isobutyric acid 79-36-7, Dichloroacetyl chloride 79-38-9 79-41-4, miscellaneous 79-42-5 79-43-6, Dichloroacetic acid, miscellaneous 79-44-7, Dimethylcarbamoyl chloride 80-10-4, Diphenyldichlorosilane 80-15-9, Cumene hydroperoxide 80-17-1, Benzene sulfohydrazide 80-47-7, p-Menthane hydroperoxide 80-51-3, Diphenyloxide-4,4'-disulfohydrazide 80-56-8, α-Pinene 80-62-6 81-15-2 82-71-3 85-44-9, 1,3-Isobenzofurandione 86-50-0, Azinphos methyl 87-68-3, Hexachlorobutadiene 87-90-1 88-17-5, 2-Trifluoromethylaniline 88-72-2, o-Nitrotoluene 88-73-3, o-Chloronitrobenzene 88-74-4, o-Nitroaniline 88-75-5, o-Nitrophenol 88-89-1 89-58-7, p-Nitroxylene 91-17-8, Decahydronaphthalene 91-20-3, Naphthalene, miscellaneous 91-20-3D, Naphthalene, diozonide derivs. 91-22-5, Quinoline, miscellaneous 91-59-8, β-Naphthylamine 91-66-7, N,N-Diethylaniline 92-52-4D, Biphenyl, chloro derivs. 92-52-4D, Biphenyl, halo derivs. 92-59-1, N-Ethyl-N-benzylaniline 92-87-5, Benzidine 93-58-3, Methyl benzoate 94-17-7, p-Chlorobenzoyl peroxide 94-36-0, Benzoyl peroxide, miscellaneous 95-48-7, miscellaneous 95-50-1, o-Dichlorobenzene 95-54-5, o-Phenylenediamine, miscellaneous 95-55-6, o-Aminophenol 95-80-7 95-85-2, 2-Amino-4-chlorophenol 96-12-8, Dibromochloropropane 96-22-0, Diethyl ketone 96-23-1 96-24-2, Glycerol α-monochlorohydrin 96-32-2, Methyl bromoacetate 96-33-3 96-34-4, Methyl chloroacetate 96-37-7, Methyl cyclopentane 96-41-3, Cyclopentanol 97-62-1, Ethyl isobutyrate 97-63-2 97-64-3, Ethyl lactate 97-72-3, Isobutyric anhydride 97-85-8, Isobutyl isobutyrate 97-86-9 97-88-1 97-95-0 97-96-1, 2-Ethylbutyraldehyde 98-00-0, Furfuryl alcohol 98-01-1, Furfural, miscellaneous 98-07-7, Benzotrichloride 98-08-8, Benzotrifluoride 98-09-9, Benzene sulfonyl chloride 98-12-4, Cyclohexyltrichlorosilane 98-13-5, Phenyltrichlorosilane 98-16-8, 3-Trifluoromethylaniline 98-82-8, Isopropylbenzene 98-83-9, miscellaneous 98-85-1, α-Methylbenzyl alcohol 98-87-3, Benzylidene chloride 98-88-4, Benzoyl chloride 98-94-2 98-95-3, Nitrobenzene, miscellaneous 99-08-1, m-Nitrotoluene 99-09-2, m-Nitroaniline 99-35-4, Trinitrobenzene 99-99-0, p-Nitrotoluene 100-00-5 100-01-6, p-Nitroaniline, miscellaneous 100-02-7, p-Nitrophenol, miscellaneous 100-17-4 100-34-5, Benzene diazonium chloride
RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(packaging and transport of, stds. for)

IT 100-36-7, N,N-Diethylethylenediamine 100-37-8, Diethylaminoethanol 100-39-0, Benzyl bromide 100-41-4, Ethylbenzene, miscellaneous

100-42-5, miscellaneous 100-44-7, Benzyl chloride, miscellaneous 100-47-0, Benzonitrile, miscellaneous 100-50-5, 1,2,3,6-Tetrahydrobenzaldehyde 100-57-2, Phenylmercuric hydroxide 100-61-8, N-Methylaniline, miscellaneous 100-63-0, Phenylhydrazine 100-66-3, Anisole, miscellaneous 100-73-2, Acrolein dimer 101-25-7, N,N'-Dinitrosopentamethylenetetramine 101-68-8 101-77-9, 4,4'-Diaminodiphenyl methane 101-83-7, Dicyclohexylamine 102-69-2, Tripropylamine 102-70-5, Triallylamine 102-81-8, Dibutylaminoethanol 102-82-9, Tributylamine 103-65-1, n-Propylbenzene 103-69-5, N-Ethylaniline 103-71-9, Phenylisocyanate, miscellaneous 103-80-0, Phenylacetyl chloride 103-83-3, Benzyldimethylamine 104-15-4, Toluene sulfonic acid, miscellaneous 104-51-8, Butylbenzene 104-75-6, 2-Ethylhexylamine 104-78-9 104-90-5, 2-Methyl-5-ethylpyridine 105-36-2 105-37-3, Ethyl propionate 105-39-5, Ethyl chloroacetate 105-48-6, Isopropyl chloroacetate 105-54-4, Ethyl butyrate 105-56-6, Ethyl cyanoacetate 105-57-7, Acetal 105-58-8, Diethyl carbonate 105-64-6, Isopropyl peroxydicarbonate 105-74-8, Lauroyl peroxide 106-31-0, Butyric anhydride 106-44-5, p-Cresol, miscellaneous 106-46-7, p-Dichlorobenzene 106-50-3, p-Phenylenediamine, miscellaneous 106-51-4, 2,5-Cyclohexadiene-1,4-dione, miscellaneous 106-63-8, Isobutyl acrylate 106-68-3, Ethyl amyl ketone 106-88-7, 1,2-Butylene oxide 106-89-8, miscellaneous 106-92-3, Allyl glycidyl ether 106-93-4, Ethylene dibromide 106-95-6, Allyl bromide, miscellaneous 106-96-7, 3-Bromopropyne 106-97-8, Butane, miscellaneous 106-97-8D, Butane, mixts. 106-99-0, 1,3-Butadiene, miscellaneous 107-00-6, Ethylacetylene 107-02-8, 2-Propenal, miscellaneous 107-05-1, Allyl chloride 107-06-2, Ethylene dichloride, miscellaneous 107-07-3, Ethylene chlorohydrin, miscellaneous 107-10-8, Propylamine, miscellaneous 107-11-9, Allylamine 107-12-0, Propionitrile 107-13-1, Acrylonitrile, miscellaneous 107-14-2, Chloroacetonitrile 107-15-3, Ethylenediamine, miscellaneous 107-18-6, Allyl alcohol, miscellaneous 107-19-7, Propargyl alcohol 107-20-0, Chloroacetaldehyde 107-25-5, Vinylmethyl ether 107-29-9, Acetaldehyde oxime 107-30-2, Methylchloromethyl ether 107-31-3, Methyl formate **107-37-9**, Allyltrichlorosilane 107-49-3, Tetraethyl pyrophosphate 107-70-0 107-71-1, tert-Butyl peroxylacetate 107-72-2, Amyltrichlorosilane 107-81-3, 2-Bromopentane 107-82-4, 1-Bromo-3-methylbutane 107-87-9, Methyl propyl ketone 107-89-1, Aldol 107-92-6, Butyric acid, miscellaneous 108-01-0, Dimethylethanolamine 108-05-4, Acetic acid ethenyl ester, miscellaneous 108-09-8, 1,3-Dimethylbutylamine 108-10-1, Methyl isobutyl ketone 108-11-2, Methyl isobutyl carbinol 108-18-9, Diisopropylamine 108-20-3, Diisopropyl ether

108-21-4, Isopropyl acetate 108-22-5, Isopropenyl acetate 108-23-6, Isopropyl chloroformate 108-24-7, Acetic anhydride 108-31-6, 2,5-Furandione, miscellaneous 108-39-4, miscellaneous 108-45-2, m-Phenylenediamine, miscellaneous 108-46-3, Resorcinol, miscellaneous 108-67-8, miscellaneous 108-77-0 108-83-8, Diisobutyl ketone 108-84-9 108-86-1, Benzene, bromo-, miscellaneous 108-87-2, Methyl cyclohexane 108-88-3, Toluene, miscellaneous 108-90-7, Chlorobenzene, miscellaneous 108-91-8, Cyclohexylamine, miscellaneous 108-94-1, Cyclohexanone, miscellaneous 108-95-2, Phenol, miscellaneous 108-98-5, Phenyl mercaptan, miscellaneous 109-02-4 109-09-1, 2-Chloropyridine 109-13-7, tert-Butyl peroxyisobutyrate 109-52-4, Valeric acid, miscellaneous 109-53-5, Vinyl isobutyl ether 109-60-4, n-Propyl acetate 109-61-5, n-Propyl chloroformate 109-63-7, Boron trifluoride diethyl etherate 109-65-9, n-Butyl bromide 109-66-0, Pentane, miscellaneous 109-70-6, 1-Chloro-3-bromopropane 109-73-9, n-Butylamine, miscellaneous 109-74-0, Butyronitrile 109-77-3, Malononitrile 109-79-5, Butyl mercaptan 109-86-4, Ethylene glycol monomethyl ether 109-87-5, Methylal 109-89-7, Diethylamine, miscellaneous 109-90-0, Ethyl isocyanate 109-92-2, Vinyl ethyl ether 109-93-3, Divinyl ether 109-94-4, Ethyl formate 109-95-5, Ethyl nitrite 109-99-9, Tetrahydrofuran, miscellaneous 110-00-9, Furan 110-01-0, Tetrahydrothiophene 110-02-1, Thiophene 110-12-3, 5-Methylhexan-2-one 110-16-7, Maleic acid, miscellaneous 110-18-9 110-19-0 110-22-5, Diacetyl peroxide 110-43-0, Amyl methyl ketone 110-49-6 110-54-3, Hexane, miscellaneous 110-58-7, Amylamine 110-62-3, Valeraldehyde 110-66-7, Amyl mercaptan 110-68-9, N-Methylbutylamine 110-69-0, Butyraldoxime 110-71-4, 1,2-Dimethoxyethane 110-74-7, Propyl formate 110-78-1, n-Propyl isocyanate 110-80-5, Ethylene glycol monoethyl ether 110-82-7, Cyclohexane, miscellaneous 110-83-8, Cyclohexene, miscellaneous 110-85-0, Piperazine, miscellaneous 110-86-1, Pyridine, miscellaneous 110-87-2 110-89-4, Piperidine, miscellaneous 110-91-8, Morpholine, miscellaneous 110-96-3, Diisobutylamine 111-15-9, Ethylene glycol monoethyl ether acetate 111-34-2, Butylvinyl ether 111-36-4, n-Butyl isocyanate 111-40-0 111-43-3, Dipropyl ether 111-49-9, Hexamethylenimine 111-65-9, Octane, miscellaneous 111-69-3, Adiponitrile 111-71-7, n-Heptaldehyde 111-76-2, Ethylene glycol monobutyl ether 111-92-2, Di-n-butylamine 112-04-9 112-24-3, Triethylenetetramine 112-57-2 115-07-1, Propylene, miscellaneous 115-10-6, Dimethyl ether 115-11-7, Isobutylene, miscellaneous 115-21-9, Ethyltrichlorosilane 115-25-3, Octafluorocyclobutane 116-14-3, Tetrafluoroethylene, miscellaneous 116-15-4,

Hexafluoropropylene 116-16-5, Hexachloroacetone 116-54-1, Methyl dichloroacetate 118-74-1, Hexachlorobenzene 118-96-7, Trinitrotoluene 120-92-3, Cyclopentanone 121-43-7, Trimethyl borate 121-44-8, Triethylamine, miscellaneous 121-45-9, Trimethyl phosphite 121-46-0, 2,5-Norbornadiene 121-69-7, N,N-Dimethylaniline, miscellaneous 121-73-3 121-82-4, Cyclotrimethylenetrinitramine 122-51-0, Ethyl orthoformate 122-52-1, Triethyl phosphite 123-00-2, 4-Morpholinepropanamine 123-15-9 123-19-3, Dipropylketone 123-20-6, Vinyl butyrate 123-23-9, Succinic acid peroxide 123-30-8, p-Aminophenol 123-31-9, Hydroquinone, miscellaneous 123-38-6, Propionaldehyde, miscellaneous 123-42-2, Diacetone alcohol 123-54-6, 2,4-Pentanedione, miscellaneous 123-62-6, Propionic anhydride 123-63-7, Paraldehyde 123-72-8, Butyraldehyde 123-75-1, Pyrrolidine, miscellaneous 123-86-4, Butyl acetate 123-91-1, Dioxane, miscellaneous 124-02-7, Diallylamine 124-09-4, Hexamethylenediamine, miscellaneous 124-13-0, Octyl aldehyde 124-18-5, n-Decane 124-38-9, Carbon dioxide, miscellaneous 124-40-3, Dimethylamine, miscellaneous 124-41-4, Sodium methylate 124-43-6 124-47-0, Urea nitrate 124-65-2, Sodium cacodylate 126-98-7, Methacrylonitrile 126-99-8, Chloroprene 127-18-4, Tetrachloroethylene, miscellaneous 127-85-5, Sodium arsanilate 129-79-3 131-52-2, Sodium pentachlorophenate 131-73-7, Hexanitrodiphenylamine 131-74-8, Ammonium picrate 133-14-2 133-55-1, N,N'-Dinitroso-N,N'-dimethyl terephthalamide 134-32-7, α-Naphthylamine
RL: ADV (Adverse effect, including toxicity); PEP (Physical, engineering or chemical process); BIOL (Biological study); PROC (Process)
(packaging and transport of, stds. for)

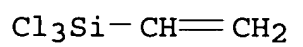
L27 ANSWER 27 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1988:28552 HCAPLUS
DOCUMENT NUMBER: 108:28552
TITLE: Modifying steel surfaces with alkoxy- and chlorosilanes
AUTHOR(S): Nazarov, A. P.; Petrunin, M. A.; Mikhailovskii, Yu. N.
CORPORATE SOURCE: Inst. Fiz. Khim., Moscow, USSR
SOURCE: Zashchita Metallov (1987), 23(6), 1007-11
CODEN: ZAMEA9; ISSN: 0044-1856
DOCUMENT TYPE: Journal
LANGUAGE: Russian
AB An attempt was made to clarify the conditions of formation of chemisorption bonds between the surface atoms of the metal and the

mols. of silanes. The electrochem. properties were studied as modified by several different methods. The electrochem. method of study (plotting of polarization curves) is sensitive and informative concerning the formation of adsorption complexes or their assocs. The investigation was made on rotating disk electrodes of steel St.3 in the presence of the following silanes: Si(OEt)4, H2C:CHSiCl3, MeSiCl3, Me2SiCl2, and Me3SiOEt.

IT **75-94-5**, Vinyltrichlorosilane
RL: PRP (Properties)
(anodic polarization of steel electrode modified with)

RN 75-94-5 HCAPLUS

CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)



CC 72-11 (Electrochemistry)
Section cross-reference(s): 29, 55

IT **Electrolytic** polarization
(of steel surface-modified with silanes)

IT 75-78-5, Dimethyldichlorosilane 75-79-6, Methyltrichlorosilane **75-94-5**, Vinyltrichlorosilane 78-10-4, Tetraethoxysilane 1825-62-3, Trimethylethoxysilane
RL: PRP (Properties)
(anodic polarization of steel electrode modified with)

IT 7757-82-6, Disodium sulfate, properties
RL: PRP (Properties)
(**electrolytic** polarization of silane-modified steel electrodes in soln. contg.)

L27 ANSWER 28 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1965:413469 HCAPLUS
DOCUMENT NUMBER: 63:13469
ORIGINAL REFERENCE NO.: 63:2391e-g
TITLE: Determination of double bonds in organosilicon compounds, containing SiH groups
AUTHOR(S): Kreshkov, A. P.; Bork, V. A.; Aparsheva, M. I.
SOURCE: Plasticheskie Massy (1965), (4), 63-5
CODEN: PLMSAI; ISSN: 0554-2901
DOCUMENT TYPE: Journal
LANGUAGE: Russian

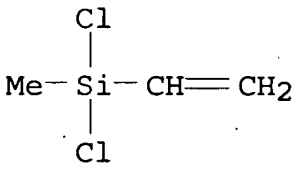
AB A rapid accurate, and sufficiently sensitive method is described for detn. of double bonds to 10-3% in organo-Si compds. contg. SiH groups. The SiH bond was quant. destroyed by KOH-MeOH soln. and

then the double bonds were titrated amperometrically with Br soln. in MeOH. The SiH groups may be detd. by amperometric titrn. of the total amt. of SiH groups and double bonds without the previous destruction. The titrn. was carried out at 0.3 v. with 4M HCl as supporting **electrolyte.** A rotating Pt microelectrode (900 rpm.) was used as anode; a S.C.E. served as cathode. The relative error was 2%. Two 10-mg. sample was dissolved in 3 ml. of concd. HCl and the soln. was dild. to 25 ml. with 0.05M NaBr in MeOH. The soln. was carefully mixed and transferred into the polarographic cell; 0.1M soln. of Br in MeOH, satd. with NaBr, was used as titrn. reagent. After the addn. of each portion of titrn. reagent the soln. was mixed and after 30-40 sec. the height of the polarographic wave was registered. To 10-30 mg. sample in MeOH was added 5 ml. 2N KOH in MeOH; after 3 hrs., the soln. was dild. to 25 ml. with MeOH. Three to 5 ml. of this soln. were transferred into the polarographic cell, 3 ml. of concd. HCl were added, and the soln. was dild. to 20-5 ml. with MeOH. The height of the polarographic wave was recorded after 25 sec.

IT **124-70-9**, Silane, dichloromethylvinyl-
(detn. of double bonds and SiH groups in mixts. of other organo-Si compds. and)

RN 124-70-9 HCAPLUS

CN Silane, dichloroethenylmethyl- (9CI) (CA INDEX NAME)



CC 2 (Analytical Chemistry)

IT **124-70-9**, Silane, dichloromethylvinyl- 762-72-1, Silane, allyltrimethyl-
(detn. of double bonds and SiH groups in mixts. of other organo-Si compds. and)

L27 ANSWER 29 OF 29 HCAPLUS COPYRIGHT 2006 ACS on STN

ACCESSION NUMBER: 1956:53894 HCAPLUS

DOCUMENT NUMBER: 50:53894

ORIGINAL REFERENCE NO.: 50:10309g-i,10310a

TITLE: Ion-exchange resin compositions

INVENTOR(S): Berry, Kenneth L.; Caddell, Jack R.

PATENT ASSIGNEE(S): E. I. du Pont de Nemours & Co.

DOCUMENT TYPE: Patent
LANGUAGE: Unavailable
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 2739906		19560327	US	

AB A particulate, ion-exchange resin (I)-coated, inert solid with a sp. gr. ≥ 1.5 is composed of particles of an inert, nonporous, water-insol. inorg. solid having dimensions of 0.01-0.5 cm., a wt. ≥ 75 lb./cu. ft., and a sp. surface ≤ 250 sq. cm./g. These particles are at least partially coated with I. Thus, glass beads, 0.65 cm. in diam., were wet with vinyltrichlorosilane and the excess evapd. Treated beads (38 parts) were placed in a mixt. of 37 parts styrene, 1 part of 40% divinylbenzene in ethylvinylbenzene, and 0.25 part α,α'-azobis(α,α,α-trimethylvaleronitrile), which was heated for about 10 hrs. at 35° under N until the liquid component became viscous and appeared to be at the point of incipient gelation. α,α'-Azobis(a,a-dimethylvaleronitrile) (0.1 part) and the mixt. are placed in a soln. of 10 parts methylcellulose ("Methocel," 4000 centipoises) in 400 parts H2O, which had been deaerated and blanketed by N. This mixt. (II) was agitated until the beads and the org. phase became dispersed. II was then heated for 4 hrs. at 60° and 2 hrs. at 100° to complete the polymerization to the infusible stage. II was dild. with H2O, and the polymer-coated beads (III) were recovered by washing with H2O, dried, and screened (8-mesh) to remove aggregates. III were treated in boiling H2O for 1 hr. to remove a trace of styrene. III were dried and placed in C2H4Cl2 (d. = 1.26), and the material that floated was discarded. The product was next dried and placed in MeI (d. = 2.28), and the material which sank was discarded. III were baked overnight in vacuo at 86°, placed in 95% H2SO4 for 60 hrs. at room temp., and then heated 15 min. in the acid at 110-20°. This step converted the polymer on the glass beads to I by sulfonation.

IT **75-94-5**, Silane, trichlorovinyl-
(glass beads treated with, for coating with ion-exchange resins)

RN 75-94-5 HCAPLUS

CN Silane, trichloroethenyl- (9CI) (CA INDEX NAME)

$Cl_3Si-CH=CH_2$

CC 13 (Chemical Industry and Miscellaneous Industrial Products)
IT Ions
(**electrolytic**, -exchanging substances, glass beads coated with resinous)
IT **75-94-5**, Silane, trichlorovinyl-
(glass beads treated with, for coating with ion-exchange resins)

=> d l28 ti 1-
YOU HAVE REQUESTED DATA FROM 27 ANSWERS - CONTINUE? Y/(N):y

L28 ANSWER 1 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Titanocene and zirconocene complexes containing dendrimer-substituted cyclopentadienyl ligands - synthesis and ethylene polymerization

L28 ANSWER 2 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Metal oxide composites containing acrylate-based monomers

L28 ANSWER 3 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Stepwise and dissociative mechanisms of the electron transfer in electrochemical reactions involving organosilicon compounds: molecular-thermodynamic approach

L28 ANSWER 4 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Emulsions of fragrance releasing silicon compounds

L28 ANSWER 5 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Comparison of methods for determination of acidic surface oxides on carbon blacks

L28 ANSWER 6 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI 1,1'-Bis(dimethylvinylsilyl)ferrocene as a Two-Directional Core for the Construction of Homo- and Heterometallic Systems

L28 ANSWER 7 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Selective and high-yield electrosynthesis of (silyl and silanylene 1-methylpyrroles) from 1-methylpyrrole bromides

L28 ANSWER 8 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Dendrimers Containing Organometallic Moieties Electronically

Communicated

L28 ANSWER 9 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Competitive electrochemical thio- and selenenylation of chlorosilanes

L28 ANSWER 10 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Electrochemical synthesis of cyclic alkylsilanes

L28 ANSWER 11 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Blueprint for a lipase support: use of hydrophobic controlled-pore glasses as model systems

L28 ANSWER 12 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Manufacture of chemically adsorbed ultrathin fluorosiloxane films

L28 ANSWER 13 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Studies of molecular alignments of monolayers deposited by a chemical adsorption technique

L28 ANSWER 14 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Optical recording material

L28 ANSWER 15 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Preparation of multilayers using chemical adsorption and electron-beam irradiation

L28 ANSWER 16 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Reactions of chemically adsorbed monolayers induced by electron beam irradiation in active gas atmosphere and applications for the preparation of multilayers

L28 ANSWER 17 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Producing a polyacetylene

L28 ANSWER 18 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Mechanism of the grafing of organosilanes on mineral surfaces. II. Secondary reaction during the grafting of alkenylchlorosilanes

L28 ANSWER 19 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Silica antifoaming agents

L28 ANSWER 20 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Methylvinylcyclotrisiloxane

L28 ANSWER 21 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Waterproofing of materials by organosilicon compounds. XIV. Chemical stability of waterproof organosilicon films on glass

L28 ANSWER 22 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Silicone waterproofing coatings

L28 ANSWER 23 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Exterior paints

L28 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Silicones. I. LXXIX. Preparation of organopentafluorosilicates in **nonaqueous** solvents

L28 ANSWER 25 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Glass-fiber coatings

L28 ANSWER 26 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Insulating electrical conductors

L28 ANSWER 27 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
TI Coating compositions containing a copolymer of a vinyl polysiloxane, an unsaturated polyester resin, and a vinyl compound

=> d l28 ibib abs hitstr hitind 24

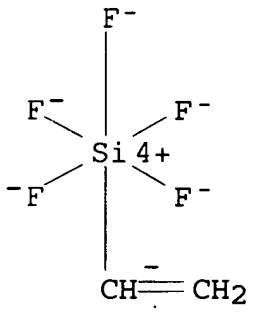
L28 ANSWER 24 OF 27 HCAPLUS COPYRIGHT 2006 ACS on STN
ACCESSION NUMBER: 1965:66646 HCAPLUS
DOCUMENT NUMBER: 62:66646
ORIGINAL REFERENCE NO.: 62:11844f-h,11845a-e
TITLE: Silicones. I. LXXIX. Preparation of organopentafluorosilicates in **nonaqueous** solvents
AUTHOR(S): Mueller, Richard; Dathe, Christian; Mross, Dieter
CORPORATE SOURCE: Inst. Silikon-Fluorokarbon-Chem., Radebeul, Dresden, Germany
SOURCE: Chemische Berichte (1965), 98(1), 241-4
CODEN: CHBEAM; ISSN: 0009-2940
DOCUMENT TYPE: Journal
LANGUAGE: German
AB The new organopentafluorosilicates, such as (NH4)2[MeSiF5] (I) and K2[PhSiF5] (II), were prepd. without solvents, in H2O, and also in org. solvents. MeSiCl3 (300 g.) added dropwise during 24 h. to 400

g. SbF3 and heated 2 h. at 70-80° yielded 145 g. MeSiF3 (III), b. -29.7 to -29.2°. PhSiCl3 (422 g.) and 680 g. SbF3 refluxed 1 h. gave 85% PhSiF3 (IV), b. 102-3°, d20 1.210. III passed 8 h. into 20 g. NH4F in 250 cc. Me2CO, and the ppt. in H2O treated with nearly satd. aq. KF yielded K2[MeSiF5]. Similarly were performed the following runs (listed in the table). , fluoride used, millimoles used, solvent used, cc., mg.-% H2O in solvent, reaction time (hrs.), III (g.)consumed, % reaction; NH4F, 270, MeCN, 100, 12.52, 16, 11, 82; NH4F, 270, C6H6, 100, 79.5, 8, 5, 37; NH4F, 270, petr.ether, 100, 48.4, 8, 2, 15; KF, 172, Me2CO, 120, 813, 8, 5, 58; KF, 344, MeCN, 150, 17.6, 8, 10, 58; KF, 172, C6H6, 150, 79.5, 8, 2, 22; KF, 86, petr. ether, 100, 48.4, 16, 0.25, 6; NaF, 119, MeCN, 100, 21.6, 6, 5.4, 90; NH4F (6 g.) in 100 cc. C6H6 contg. 79.5 mg. H2O/100 cc. treated dropwise with 14 g. IV and stirred 8 h. gave 9 g. mixt. of NH4F and(NH4)2[PhSiF5]. Similarly were performed the runs listed in the 2nd table. fluoride used, milli, millimoles used, millimoles IV used, solvent used, cc., mg.-% H2O in solvent, reaction time (hrs.), IV (g.) used, % reaction; NH4F, 325, 164, Me2CO, 100, 607, 3, 26, 99; NH4F, 325, 164, MeCN, 100, 17.6, 4, 25, 95; NH4F, 162, 87, petr. ether, 100, 48.4, 8, 3, 36; KF, 172, 87, MeCN, 100, 607, 5, 14, 100; KF, 172, 87, MeCN, 100, 12.52, 5, 12, 86; KF, 172, 87, C6H6, 100, 18.78, 5, 1, 10; KF, 172, 87, petr. ether, 110, 48.8, 5, 1, 11;

IT **16924-21-3**, Silicate, pentafluorovinyl-, diammonium (prepn. of)

RN 16924-21-3 HCAPLUS

CN Silicate(2-), ethenylpentafluoro-, diammonium, (OC-6-21)- (9CI) (CA INDEX NAME)



●2 NH_4^+

CC 39 (Organometallic and Organometalloidal Compounds)
IT 368-47-8, Silane, trifluorophenyl- 373-74-0, Silane, trifluoromethyl- 730-93-8, Phosphonimidic diamide, N,N',N''-triisopropyl-P-phenyl- 884-76-4, Phosphonimidic diamide, N,N',N''-triethyl-P-phenyl- 1840-61-5, Ammonium pentafluoromethylsilicate, (NH4)2[SiF5-Me] 5507-59-5, Potassium pentafluorophenylsilicate 12105-98-5, Ammonium pentafluorophenylsilicate, (NH4)2[SiF5Ph] 12105-98-5, Ammonium pentafluorophenylsilicate, (NH4)2[SiF5Ph] **16924-21-3**, Silicate, pentafluorovinyl-, diammonium 17979-70-3, Potassium pentafluoromethylsilicate, K2[SiF5-Me] 46059-39-6, Silicate, pentafluorophenyl-
(prepn. of)

=>